MAY 11, 1953

NEWS ISSUE

Electrical World

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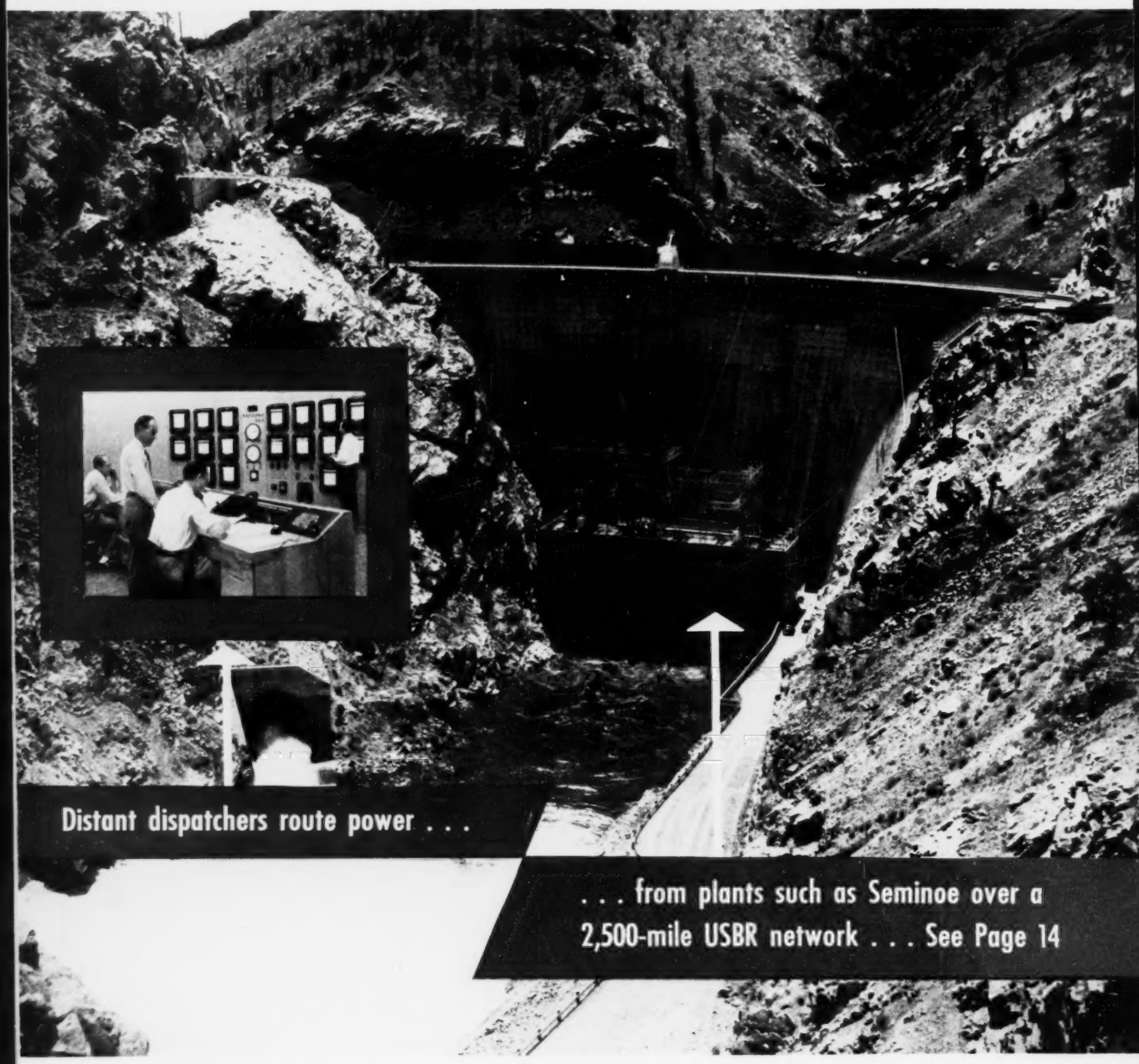


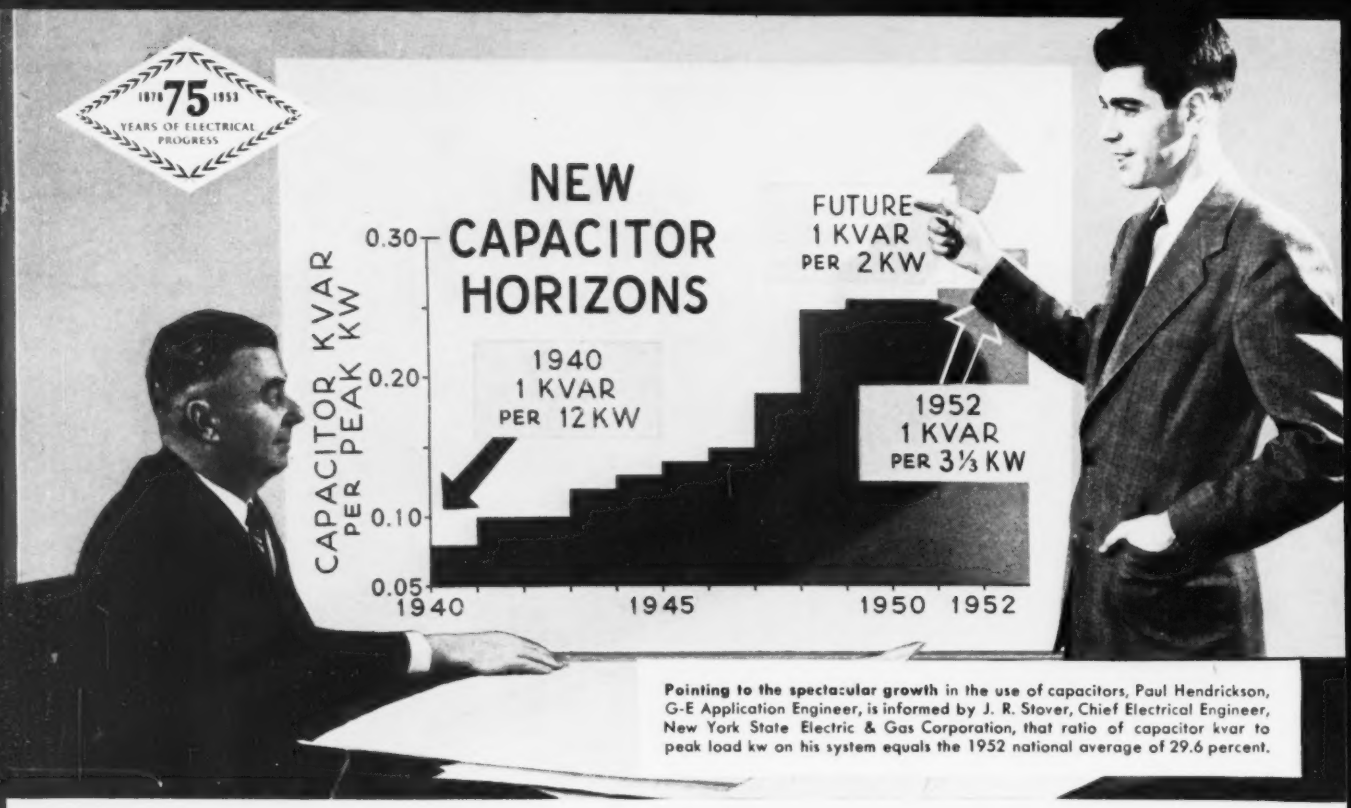
Distant dispatchers route power . . .

. . . from plants such as Seminoe over a 2,500-mile USBR network . . . See Page 14

Pump Turbine Unit at Hiwassee Aids TVA . . . Page 36

Are Bond Yields Leveling Off? . . . Page 50

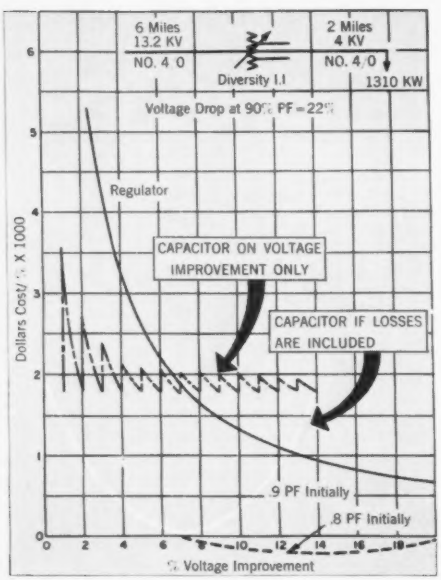
1876 75 1953
YEARS OF ELECTRICAL PROGRESS



Pointing to the spectacular growth in the use of capacitors, Paul Hendrickson, G-E Application Engineer, is informed by J. R. Stover, Chief Electrical Engineer, New York State Electric & Gas Corporation, that ratio of capacitor kvar to peak load kw on his system equals the 1952 national average of 29.6 percent.

Growing loads, changing equipment costs, are creating

NEW CAPACITOR FRONTIERS ON MANY SYSTEMS



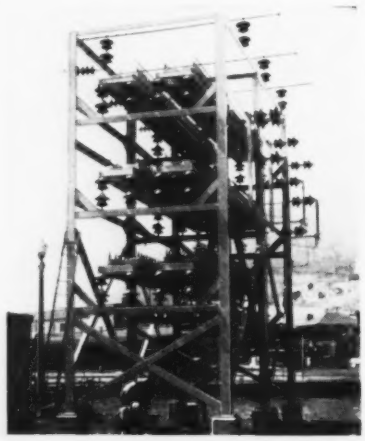
Capacitors give a double benefit to the system by improving voltage and reducing losses. As shown by the lower white dotted line, savings in losses alone may offset the cost of capacitors. Chart is from a new paper, "The Expanding Capacitor Frontiers."

One of the first high-voltage banks supplied by General Electric, this open rack-type Pyranol* capacitor bank is rated at 9900 kvar, 46 kv, 3 phase, Wye connected.

*Reg. Trade Mark of General Electric Co.

Periodic review of the factors influencing kilovar requirements has now become an established practice with system planning engineers.

Rapid expansion, coupled with the changing character of loads due to wider use of fluorescent lights and motorized devices with lagging power factors, has brought an increasing trend to broader capacitor applications. The use of capacitors has now been extended to all parts of the system—from underground secondary networks and residential secondaries to high-voltage transmission.



The major factor influencing these expanding application frontiers is that of economics. Capacitors improve voltage regulation, thus enabling circuits to carry more load. They reduce the need for additional copper and increased system investment. Balanced against these savings is the low cost of capacitors themselves. They are the only item of major electrical equipment that costs less today than in 1940.

It is significant that while peak kilowatt loading on utility systems has increased less than four times in the past 20 years, kvar of capacitors installed has increased almost 100 times. For a complete discussion of the opportunities and economics of capacitor application, write for "The Expanding Capacitor Frontiers." General Electric Co., Schenectady 5, N. Y.

301-222

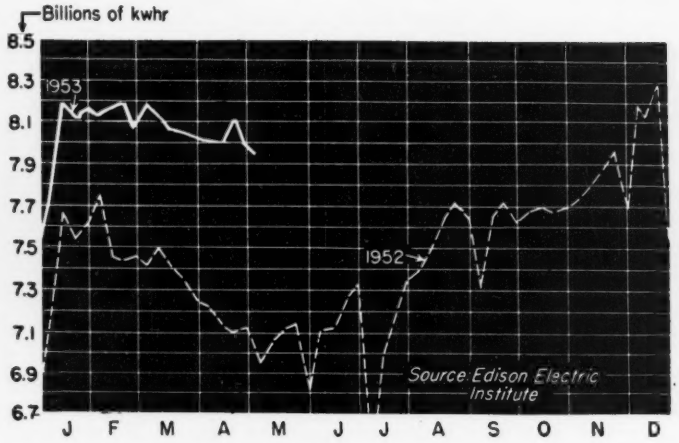
MORE POWER TO AMERICA

GENERAL ELECTRIC

VOLUME 139, NO. 19

May 11, 1953

Electrical World



Output Week Ended May 2—7,938,823,000 Kwhr

Per Cent Change From Previous Year

	Total US	New Eng.	Mid. Atlan.	Cent. Ind.	West Cent.	South-east	South Cent.	Rocky Mount.	Pacific NW	Pacific SW
May 2	+14.2	+13.9	+9.3	+19.1	+14.1	+16.6	+9.7	+16.8	+10.7	+12.2
April 25	+12.3	+11.1	+8.6	+13.1	+11.7	+16.1	+7.4	+15.1	+11.4	+15.2
April 18	+14.2	+16.1	+11.4	+13.2	+11.9	+16.1	+10.3	+17.1	+15.0	+21.3

Electric Power Statistics

		Latest Month	Preceding Month	Year Ago
Peak Load (Million Kw)	Jan.	74.9*	75.5	69.4
Capacity (Million Kw)	Mar.	83.15	82.83	76.34
Production (Billion Kwhr)	Feb.	33.60	36.66	31.54
Hydro		8.99	9.26	9.46
Fuel		24.60	27.40	22.07
Fuel Consumption				
Coal (Million Tons)	Feb.	9.16	10.49	8.74
Oil (Million Barrels)		6.81	7.70	4.77
Gas (Billion Cu Ft)		57.82	60.06	54.82
Sales (Billion Kwhr)	Feb.	31.21	32.07	29.08
Residential		9.31	9.82	8.51
Commercial		5.17	5.37	4.87
Industrial		14.76	14.90	13.82
Other		1.96	1.97	1.88
Net Income Class A & B Companies ($ Million)	Jan.	98.55	99.24	87.09
Estimated Dec. '53 Peak (Million Kw)	Jan.	87.0	87.0	88.9
Kwhr per Residential Customer (12 Month Average)	Jan.	2,183	2,169	2,021
Revenue per Kwhr Residential Service (12 Month Average)	Jan.	2.77¢	2.77¢	2.81¢
Canadian Production (Billion Kwhr)	Feb.	5.26	5.66	4.97

Business Statistics

FRB Industrial Production Index†††	Mar.	239*	236	217
Gross National Product Annual Rate ($ Billion)	4th Qtr.	355.2*	343.0	337.1
E. W. 5 Industry Production Index	Mar.	129.8*	129.0**	123.8
ENR Construction Cost Index††	Apr.	123.6	123.2	116.2
BLS Consumer Price Index	Mar.	188.8	188.6	188.0
NEMA Insulation Materials Sales Index†	Feb.	649	643	528
NEMA Electric Appliance Sales Index†		306	293	224
NEMA Household Refrig. Sales Index†		208	183**	153

* Preliminary ** Revised † 1936=100 †† 1949=100 ††† Unadjusted

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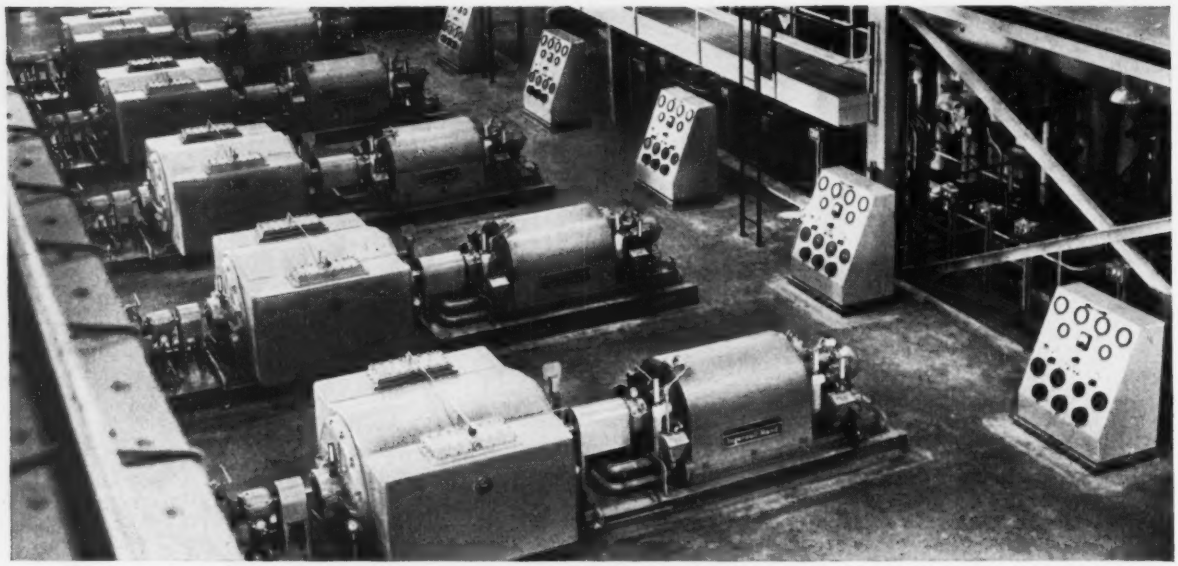


The G-E V-c interlocked armor cable system offers many advantages in the planning of circuits for boiler feed-pump motors, coal-handling equipment, and other station auxiliary units.

For flexibility in planning new stations use the G-E V-c interlocked armor cable system

Changes from original plans in the number, size, or location of station auxiliary equipment are considerably less of a problem when you supply power with the G-E V-c interlocked armor cable system. The presence of piping installed for other services is not a major problem when you use interlocked armor cable for electric service. Simply make one-line layouts—save drafting costs—and rely on the G-E V-c interlocked armor cable system to handle increased power requirements or changed locations. Here's why.

The cable

G-E V-c interlocked armor cable, Catalog Number SI-13222 (0-5000 volts), combines the reliability of varnished-cambric insulation and a tough, inert thermoplastic jacket with the protection of metal armor—steel, bronze, or aluminum. The cable is flexible and can be pulled in long runs around corners, bends, or projections. It does not require conduit and eliminates extensive engineering layout time. It can be quickly relocated if necessary and is always available for visual inspection.

Racks

Aluminum alloy racks, available in several widths, are used to support G-E interlocked armor cable. The racks can be hung from the ceiling or walls inside or outdoors. Bends and fittings are available to make the racks conform to slopes, rises, corners, or other unusual building contours.

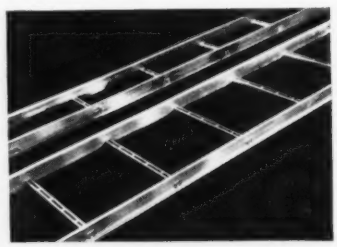
For outdoor equipment

The same G-E V-c interlocked armor cable system used to supply power for units located in a building can also be used above ground to furnish power for units located outdoors. The system thus meets the trend towards the elimination of building construction wherever possible.

It will pay you to investigate the G-E V-c interlocked armor cable system. See your G-E wire and cable specialist, or, write to Section W78-527, Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

®Registered Trade-mark General Electric Company

Easy to bend. Corners and projections present no major installation problems for the G-E V-c interlocked armor cable system.



These inexpensive racks carry the cable and can be installed quickly and easily.

You can put your confidence in—

1878 75 1953 YEARS OF ELECTRICAL PROGRESS

GENERAL ELECTRIC

THE ELECTRICAL WEEK

The Issue's News Highlights—Secretary of Interior Douglas McKay leaves the decision of federal or private development of Snake River up to FPC.

Testimony released by House subcommittee shows that at least 15 utilities prefer federal power delivery contract like one proposed by Georgia Power to "wheeling" contracts fostered under Democratic Administrations.

McKay approves a contract providing for integration of output from Davis Dam and Arizona PS' Saguaro plant.

"Million-letter" campaign is being pushed by a group in Gallatin, Tenn. This drive is to deluge Congress with letters from all parts of TVA area with pleas to give the power agency its full appropriations.

Washington PSC will begin hearings May 18 at Olympia on proposed Puget Sound P&L merger with Washington Water Power. PSC has retained Ford, Bacon & Davis to "make an impartial and disinterested engineering study as to the effect of proposed merger." Survey data will be considered with other evidence at the hearing. Under the companies' agreement, merger is to be completed by July 30 unless the time is extended by joint action. Vice Pres Arthur Garrett of Jefferson PUD says "one of our major objections to proposed merger is the danger our power supply will be siphoned off for the benefit of eastern Washington and Idaho properties of WWP."

Reddy Kilowatt Youth-Parent Plan was released today to Reddy Kilowatt companies. The plan, publicized in a booklet, "Where Are You Going to Sell 185 Million Kilowatts?" stresses the necessity of selling youth on the advantages of electric living if all the capacity that will be on the line in 1964 is to be utilized.

Officials of UWUA, CIO, are "absolutely opposed" to exempting "local" public utilities from Taft-Hartley law and leaving them to state labor jurisdiction (see p 34). IBEW, AFL, is still studying such an amendment proposed by Sen Alexander Smith.

A seven-story electric office building, now under construction in Caracas, Venezuela, incorporates a heliport on roof which is stressed for a four place helicopter in crash landing. Special heliport lighting is being installed. Building was designed by Ebasco Services. Similar heliport facilities will be planned on all future utility service and office buildings by Ebasco, according to Ray Colcord, senior consultant.

Pennsylvania legislation—House Bill 758 introduced in General Assembly would require public utilities to pay a 3% county tax on gross receipts . . . House Bill 840 introduced in the legislature would replace PUC with a Pennsylvania Fair Rate Board.

Union Electric of Missouri's Pres J. W. McAfee tells PSC that properties for rate purposes total $407 million and a $5,165,000 proposed rate hike for Missouri customers would give 4.67% rate of return.

Off the Washington Wire—New REA Chief Ancher Nelsen, emphasized "sound loans" for farm electrification at his first meeting with agency staffers. He paid tribute to ex-Administrator Claude Wickard as "a great American." . . . Henry County Rural Electric Membership Corp, New Castle, Ind., becomes first REA borrower to pay back its loan from revenues. Final payment on its total of $655,513 in loans was made 13½ years ahead of schedule.

Two top FPC lawyers resigned last week. They are Bradford Ross, general counsel, and Bernard A. Foster, Jr, associate general counsel . . . Several state governors in Washington last week protested deep cuts in spending for power and reclamation projects. Gov Sigurd Anderson of South Dakota hopes to persuade Congress to restore funds for Missouri River basin projects.

Nine New York Democratic Congressmen petitioned a Senate committee for legislation which would provide for a power preference clause in any bill for construction of St. Lawrence power project. However, they seem to be shooting wide of the mark since the matter is now before FPC and a decision is expected shortly.

Westinghouse Electric breaks ground on 40-acre plot near Pittsburgh for one-floor manufacturing plant of about 87,000 sq ft which will build parts for atomic power plants. Westinghouse believes it to be the first privately financed atomic manufacturing plant.

Congratulations—Westinghouse Electric elects following vice presidents: Bruce D. Henderson in charge of purchases and traffic, succeeding Andrew H. Phelps retired; William C. Rowland in charge of manufacturing and repair division; Franklin L. Snyder assigned to staff of L. E. Osborne, executive vice president, defense products divisions; C. Swan Weber in charge of Washington office; and Robin S. Kersh in charge of Eastern District, with headquarters in New York City.

General Electric elects George L. Irving commercial vice president with headquarters in Dallas. He succeeds William B. Clayton retired.

J. G. White Engineering Corp elects Edward N. Chilson chairman and Ford Kurtz president . . . Union Carbide & Carbon names Thomas D. Cartledge vice president . . . Sylvania Electric Products names W. Benton Harrison vice president, finance, a new post . . . Southern Association of Science & Industry names Dr A. P. Black president, succeeding James F. Crist, vice president of Southern Co, who becomes chairman.

Irving Trust Co elects John F. Childs vice president and head of public utility department, succeeding Tom P. Walker who has been made president and director of Transcontinental Gas Pipeline Co . . . Joseph Hoffman, formerly vice president of James R. Kearney Corp, becomes executive vice president of Hi-Voltage Equipment Co.

(*Continued on page* 10)

Interior quits championing federal Hells Canyon project (above) on Snake River and withdraws its opposition to Idaho Power's plan for private development leaving decision to FPC as . . .

McKay Takes Middle Road on Power

Interior Department is giving up its role as a partisan advocate of federal construction of the big water power projects. Instead it will act as a "friend of the court" furnishing information to Federal Power Commission in fights involving federal-private development of hydroelectric sites.

This is the position which Republican Interior Secretary Douglas McKay outlined in withdrawing federal opposition to the proposed Idaho Power Co development on the Snake River in Idaho. McKay's predecessor, Oscar L. Chapman, had officially championed the federal construction of the Hells Canyon high dam project on the disputed site. Idaho Power plan envisions three lower dams on the river with Oxbow to be built first.

Cooperation with FPC . . . Instead of actively opposing the Idaho Power application, McKay said his department will "make available to the commission all of the information which it has regarding the (Oxbow) application . . . and will cooperate in any way which the commission desires to assist it in the fullfilment of its functions."

Thus McKay and his Interior officials avoided making a straight "yes" or "no" decision on federal development of the Hells Canyon site. Instead he passed the problem to FPC, a quasi-judicial body that to some degree is also susceptible to the wishes of the Administration.

FPC has sweeping authority to approve or disapprove applications for hydroelectric development, looking only for the fullest development of a waterway. In the case of Oxbow, it may approve the company proposal, thus tossing out federal development. Or it may recommend federal development even though there is no formal intervention or plan offered for such development.

Under a crossfire of questioning from reporters, Secretary McKay declined to say whether he personally or in an official capacity preferred the federal proposal over the company proposal. "My own views on the subject," he said, "would be irrelevant to the discussion."

McKay emphasized that his action in this case "does not mean the U. S. government is going to get out of the

business of building multi-purpose projects. . . ." As a general policy, he said, "private enterprise wherever possible should develop hydroelectric power where it does not interfere with the orderly development of our natural resources."

Western Governors Attend . . . Eleven western state governors were on hand at the press conference at which McKay disclosed his action on the Hells Canyon proposition. None of the governors voiced opposition to McKay's stand, but he cautioned against any presumption that they were whole-heartedly in favor of it.

The action came at this time because FPC has scheduled hearings for July 7 on Idaho Power's Oxbow application. Former Secretary Chapman has petitioned FPC to intervene in the case in opposition to the company's application. That petition was pending.

In a letter to the FPC following McKay's decision, Interior Solicitor Clarence A. Davis wrote in part:

"We therefore respectfully request that the petition of intervention heretofore filed on behalf of this department be withdrawn, reserving the right to submit such information from time to time as the commission may request."

For the time being, McKay's action appears to be an inconclusive step in charting Republican power policy. Still unanswered is the question as to how big a role the federal government will play in development of the large hydroelectric projects. By transferring the final decision to FPC, the Eisenhower Administration has another chance to indicate its position on federal construction of Idaho project.

For this year and next McKay indicated that drastic reductions in the federal budget would make it practically impossible for the Administration to undertake any project on the scale of Hells Canyon. He said he might offer such a bill if requested by Congress, but expressed doubt that it would get past the ax-wielding Budget Bureau.

Both Plans Considered . . . A statement handed out at the press conference gave a broad analysis of the opposing plans for development of the Snake River in the vicinity of the Hells Canyon site. The proposed federal project would have some flood control and reclamation repayment advantages over the company plan. Its storage capacity would be nearly four times that of the proposed Idaho Power development. Installed capacity at the proposed federal dam would be 900,000 kw compared with approximately 783,000 kw at the three lower company-built dams.

But Interior Department estimated the first company unit would go on the line seven or eight years before a federal development could be in production.

Because of this long lead time required to get Hells Canyon in operation, Interior estimates there would be a "substantial" loss of power generation as compared to the company plan. "Based upon reasonable estimates, the Hells Canyon project would have to operate more than 25 years before it could possibly make up for the loss," said the Interior Department.

Congress Action Needed . . . Federal construction of the project would, of course, require Congressional authorization. Congress has twice failed to give its approval—once by a Senate vote and once by indefinite postponement. New legislation is now before both houses which would authorize the $359-million project, but it has little chance of a hearing unless the Administration actively supports it.

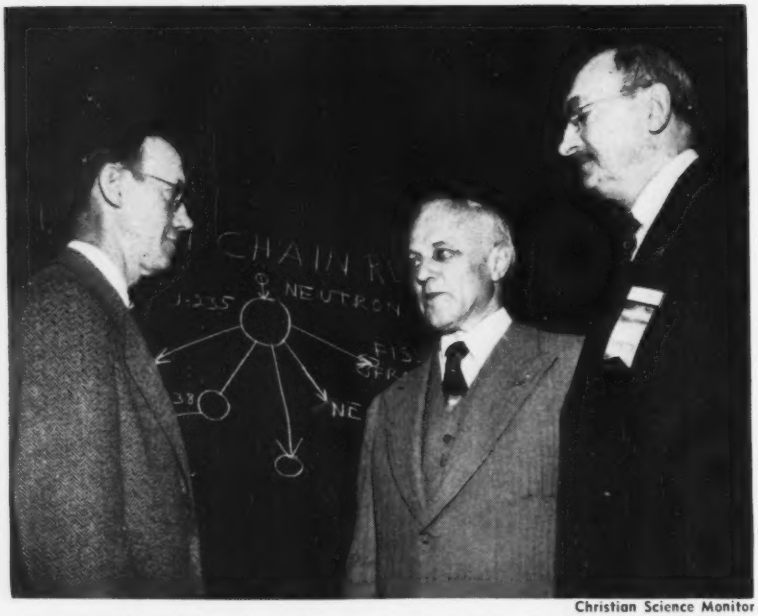
In the event that FPC should turn down the company application and call for federal development, McKay would certainly have a much stronger argument to present to Congress for authorization of Hells Canyon.

Decision to scale down the role of the Interior Department as an active participant in opposing private resource development is based on several court decisions issued in the past six months. The Roanoke Rapids decision (EW, March 23, p 108) was an indication that the Interior Department went too far in opposing private development on the Roanoke River. However, the court did uphold the department's right to intervene in the case. Several other recent cases also have questioned Interior's advocacy of federal participation in natural resource development and use.

Foundation for a New Generator

Work on a $13.5 million addition at the Kyrene Steam Plant to increase capacity by 66,000 kw for the Salt River Valley Power District in central Arizona is moving on schedule to assure completion by the June 4, 1954 deadline. Pictured above are foundation piers for the generator.

The new unit will be of the same general design as the first Kyrene Plant generator. Combined capacity of the two will be 100,000 kw. Of a semi-outdoor type of construction, the new unit will be "buttoned on" to the present steam plant. A 34-ft corrugated wall will be moved off the present plant to allow installation of the second unit.



Christian Science Monitor

AIEE MEETING SPEAKERS enjoy a private conservation together. They are (l to r) Dr Lawrence R. Hafstad, director of reactor development for Atomic Energy Commission; Dr Karl T. Compton, chairman of Massachusetts Institute of Technology; and C. A. Powel, lecturer at MIT

Voltage Regulation Discussed

Northeastern District AIEE conference also hears talk by Compton on atomic power. Boston section anniversary noted

One hundredth anniversary of the birth of Elihu Thomson and 50th of the founding of the Boston Section American Institute of Electrical Engineers were celebrated as a special feature of the Northeastern District meeting in Boston April 29-May 1.

Present circumstances fully warrant a relaxation of the restraints incorporated in the Atomic Energy Act said Dr Karl T. Compton, M.I.T. chairman. Prevailing restrictions are, he said, inimical to progress, and, in the industrial field, to investment in power reactors. Permission should be obtainable to own such plants and the fissionable fuels for their operation, he declared. On such a basis the commercial practicability of atomic power should not be too far away, he said, particularly if the government will pay a fair price for the bred plutonium.

Voltage Regulation . . . Voltage regulation from three angles—bus regulation, feeder regulation, and primary network correction—was one of the major themes at the meeting. Brockton Edison Co's 60,000 kva of load over a 600 sq mile area is served entirely by 4-kv primary network and Russell Wheatley detailed the phase-shift method used to regulate the three-phase voltage. The regulators, he said, tap the adjacent phase for a corrective component that balances load between adjacent transformers without disturbing the reactive distribution. The system also has some 70 banks of time-switched capacitors.

For cascaded regulators change of voltage (due to load changes) in preceding sections is multiplied by the percent boost of the regulator, according to E. A. Sagan, Westinghouse Electric Corp. Considerable improvement in feedpoint voltages can be realized by use of a neutral compensator in primary relay circuits of three self-controlled regulators, he said.

Adequate consumer voltage cannot generally be achieved by bus regulation alone, said D. R. Samson, General Electric, but grouping of similar feeders and supplementary regulating devices will support bus regulation. Investment for six supplementary single-phase regulators for two feeders is not much greater than for a single bus regulator or load ratio control, he said. Bus regulation is applicable where the load is close, feeder lengths equal and loads balanced between feeders and phases, Samson said.

Relaying . . . H. W. Lenser, Westinghouse, outlined the advantages of microwave protective relaying vs carrier channeling under specified conditions involving study of system requirements. Microwave channels, he said, cannot compete economically with carrier when applied in the same manner as the latter, but deserve serious consideration for relaying several circuits between the same two terminals.

Discussion indicated progress has been made in overcoming limitations of carrier by "squeezing" relaying channels and even repeating channels on very large utility systems. Amplifiers are now available to increase harmonic frequency shift.

George Steeb, Niagara-Mohawk Power Corp, described an unconventional method of relay protection for a 100,000-kva unit generator-transformer layout. Relays and circuits are claimed to be simple. One set of relays, Steeb said, responds to four kinds of disturbance. Other protection, he continued, includes meeting generator instability, loss of excitation from flow of reactive current to the generator, accidental energizing at standstill and back-up needs at lower voltage breakers. Operating experience has been very satisfactory, Steeb reported, and Niagara Mohawk has equipped eight 100,000-kva units in this manner.

W. C. Morris and L. E. Goff, General Electric, presented details of a negative-phase-sequence-overcurrent relay for generator protection to insure that a machine will remain on the system as long as possible without exceeding its short-time capacity.

In the discussion use of differential relays was defended vigorously. Ground fault neutralizers were commended. One speaker said reliability of potential transformers is equal to that of the station battery, citing but three faults in his 30-years' experience.

Wheeling Contracts Face Test

Subcommittee hearings reveal sentiment rising for Georgia Power proposal whereby utility keeps preference customers

Power "wheeling" contracts, fostered for the past decade by Congress and Democratic administrations, are up for an acid test.

Alternative to the "wheeling" contract is the power delivery contract proposed by Georgia Power Co. Testimony recently released by a House Appropriations subcommittee shows that at least 15 electric companies in the Southeast and Southwest are ready to fall in behind the Georgia-type contract if and when it is signed by the Eisenhower Administration.

"Wheeling" contracts now in existence between the federal government and electric companies are, in effect, power exchange agreements. Under them, the government contracts with the company to take power from government hydroelectric projects and deliver it to preference customers. In addition, the agreements also call for the company to furnish additional energy in order to firm up the government power delivered to the preference customers. Such customers thus become customers of the federal government.

New Twist . . . Georgia Power's proposal would permit the company to retain the customer as its own. The company would pick up the energy generated at federal projects and deliver a similar block of power to customers designated by the federal government. Additional demands of the preference customer would be met by the company.

Electric companies believe this is a fairer approach for disposing of energy generated at federal hydro projects in the Southeast and Southwest. Widely fluctuating water flows in these regions greatly diminish the value of the water power projects for firm power. They are economical only when used for "peaking."

The Truman Administration flatly turned down the Georgia Power proposal on the grounds that it did not meet "minimum power policy requirements." It was argued that such a contract did not permit the government to fulfill its legal obligations to preference customers.

Second Try . . . The proposal was resubmitted to the Eisenhower Administration soon after it took office. Interior Secretary Douglas McKay, who must make the decision as to whether to accept it, is giving it serious consideration.

Twelve Southwest electric companies which had offered the government a "wheeling" contract have now withdrawn that and are negotiating for a delivery-type agreement. At least three companies in the Southeast are holding out for the same type contract.

Two factors account for this new movement by the companies away from "wheeling" contracts:

- Entrance of a new administration which is believed to have less public power bias than the past Democratic administrations.
- Decision of the Arkansas Supreme Court in the Ozark steam plant case. In its opinion, the state court indicated that the government has no legal authority for entering into "wheeling" arrangements.

This decision, argue the electric company executives, renders the usual "wheeling" agreements illegal. For that reason, the 12 Southwest companies must renegotiate their proposed contract.

8 Firms Join Studies on Atomic Power Plant

Seven additional electric companies and one electrical manufacturer last week joined in studies relating to development of an atomic power plant.

This group will work with Detroit Edison Co and Dow Chemical Co in the development study which was approved by the Atomic Energy Commission in May of 1951. This brings to 25 the number of industrial concerns affiliated with the Detroit-Dow companies.

These two companies will continue to be the primary participants with AEC but will draw on qualified personnel from the additional companies as dictated by the needs of the development project.

The seven additional electric companies are: Consolidated Gas Electric Light & Power Co of Baltimore, Hartford Electric Light Co, Niagara Mohawk Power Corp, Potomac Electric Power Co, Rochester Gas & Electric Corp, Southern Co, and Atlantic City Electric Co. Electrical equipment manufacturer in the new group is Allis-Chalmers Manufacturing Co.

Radio Antennas . . .

. . . discussed by PEA group. High-gain type called best for 150 and 450 mc base stations

The most economical antenna for 150 mc and 450 mc base stations is high gain, L. R. Krahe, Andrew Corp, told the Pennsylvania Electric Association's Communication Committee at its Pittsburgh meeting April 30-May 1. High gain gives better radiation for the money than high towers, he said. The second consideration, he added, is to feed this antenna with a suitable low loss transmission line. Then the tower height can be less, with appreciable savings in cost.

The high-gain antenna has the added advantage, said Krahe, of improving reception from mobile units. Not only does it pick up more signal intensity, but its sensitivity pattern tends to suppress noise reception for clearer intelligibility.

Single Station for Baltimore . . . Tests of 450 mc communication in the Baltimore area indicate that the city can be adequately covered with a single base station, said J. A. Helldorfer, Consolidated Gas Electric Light & Power Co. The dependable range in rural area is about ten miles, he said, and communication is appreciably more free from noise than the lower frequency channels. The company looks to 450 mc for an additional channel for mobile communication.

There are now 2,000 mc units in service, said Stuart Meyer, Link Radio Corp. Improvements have achieved a signal sensitivity of 0.6 to 0.8 microvolt with high selectivity and stability.

But power line carrier will compete with microwave, said Frank B. Gunter, Westinghouse Electric Corp. New equipment, he said, will give more channels and better dependability at lower installation and maintenance cost.

THE ELECTRICAL WEEK

CONTINUED

Depa lifts all federal power limitation orders (EO-4A and EO-5) affecting the Pacific Northwest . . . FPC moves its office from the Hurley-Wright Building at 18th St. and Pennsylvania Ave., Washington, D. C., to New General Accounting office building.

Bill designed to give Congress a tighter rein over spending for power and reclamation projects started its legislative route last week. Proposed legislation would make it illegal for any federal official to obligate the government for any amount in excess of Congressional authorization for specific reclamation projects.

West Penn Power has petitioned Superior Court of Pennsylvania, appealing PUC's order to reduce rates by $1,633,840 a year and to make refunds, estimated to total $2.4 million for period the increased rates were in effect. It was accompanied by a request to suspend the order pending the court's decision on the appeal.

Bids for completion of Chief Joseph Dam powerhouse, estimated to cost $7.5 million, have been called by Corps of Engineers, for opening June 30 at Seattle.

SEC approves Columbia Gas System's plan to sell a new 1.7 million share common stock issue at competitive bidding—thus easing pre-emptive rights requirements . . . Interstate Power will pay June 19 to stock of record June 4 a quarterly common stock dividend of 16¢ a share as compared with 15¢ a share previously.

The controversial Oahe dam and power plant in South Dakota is back in the Administration budget. Missouri basin governors persuaded the Budget Bureau to restore about half the funds requested by the former Democratic Administration for this project.

Obituary—John S. Lapp, 74, founder of Lapp Insulator Co, died in Palm Springs, Calif., on May 2.

IN THE INDUSTRY

The industry's Electricity for Better Living program, which is now under way, has just received a boost that may give the industry more publicity than it has gotten since the golden anniversary of the invention of the incandescent lamp, 25 years ago.

The boost came in the announcement that major and minor baseball leagues will cooperate with electric companies in the cities where ball parks are located in observing the 70th anniversary of the first baseball game played under electric lights.

There is a mistaken idea that night baseball got its start at Crosley Field, Cincinnati, where the first major league night game was played in 1935. Though this game, made possible by modern floodlights, did signal that night baseball was here to stay, the idea of playing under electric lights had been lying dormant for many years.

On June 2, 1883, Fort Wayne Methodist College and Quincy, Ill., played at Fort Wayne under 17 arc lights of 4,000 cp. Quincy won, 19-11, and the high score was attributed to the poor lighting.

But that game sowed the germ of an idea that never died. To those pioneers the industry will pay tribute on a date as close to June 2 as schedules allow. Ford Frick, commissioner of baseball, has endorsed the celebration and has called on the various baseball leagues to cooperate.

The St. Louis Cardinals have announced that they will join the observance at one of their games at Sportsman's Park. Since Fort Wayne is not represented in organized baseball, a celebration may be centered around Indianapolis in the American Association. Indiana utilities would cooperate. Rochester Gas & Electric Corp is sparking plans for a celebration with the Rochester club. No doubt other celebrations will be announced later.

Baseball Only a Facet . . . But baseball is only one facet of the Electricity for Better Living program. Many electric utilities and manufacturers of electrical equipment and appliances have already started to publicize the fact that the present-day high standard of comfort, convenience, health and well-being of the typical American family home is due to free enterprise at work, especially free enterprise as represented by the present investor-owned electric companies.

The program will get into full swing late this month. At this time industry companies will use all advertising and publicity media to tell their story to the public. As the program is to continue throughout the year, there is still time for all companies to participate.

TECHNICAL NOTES

ARCHER E. KNOWLTON

Contaminated insulators were cited as the reason for 25 practically simultaneous pole-top fires.

Char residual from bituminous coal hydrogenation will be usable as furnace fuel. It will constitute about 40% of the weight of coal treated; will have reduced volatile and sulphur content.

Primary voltages for secondary network systems are (in terms of load carried) 16.8% in the 2-5 kv class, 1.8% in the 5-10 kv class, 63.4% in the 10-15 kv class and 18% higher than 15 Kv.

Synthetic rubber manufacture takes 40% of the total national production of benzene. From coal hydrogenation 8.2% of the products are benzene.

Dc electromagnetic pump has no moving parts. Liquid metals are propelled by cross current reacting with magnetic field at right angles to the pump cylinder.

Bolometers located at Calais helped the Germans follow World War II movements of British vessels in the English Channel at night by picking up radiation from the funnels.

Interconnected systems that shirk carrying their own due load contribute to poor frequency, erratic tie-line loading, reduced tie-line utilization, lowered fuel economy, and waste of hydro.

"I hand-weld the hanger brackets to the tank, so I know the POLE STAR will stay on the pole," . . .

says **RALPH CASPER**
POLE STAR WELDER

Pole Star transformers for pole mounting are available in all standard sizes from 3 Kva through 100 Kva, and in voltages up through 14.4 Kv.

When a Pole Star transformer is hung on a pole, we want it to stay there. That's why we hand-weld the hanger brackets to the Pole Star tank. Since the hanger brackets carry the full weight of the transformer at all times, we carefully weld completely around the edge of the bracket flange. Absolutely no crevices are left which could remain unpainted and where moisture could enter and cause rust. As a matter of fact, the welded section is stronger than the tank and is positive assurance that when a Pole Star is hung on a pole, it's there to stay.

Let the POLE STAR be your guide

Product Of Long Experience
Safe Thrifty And Reliable

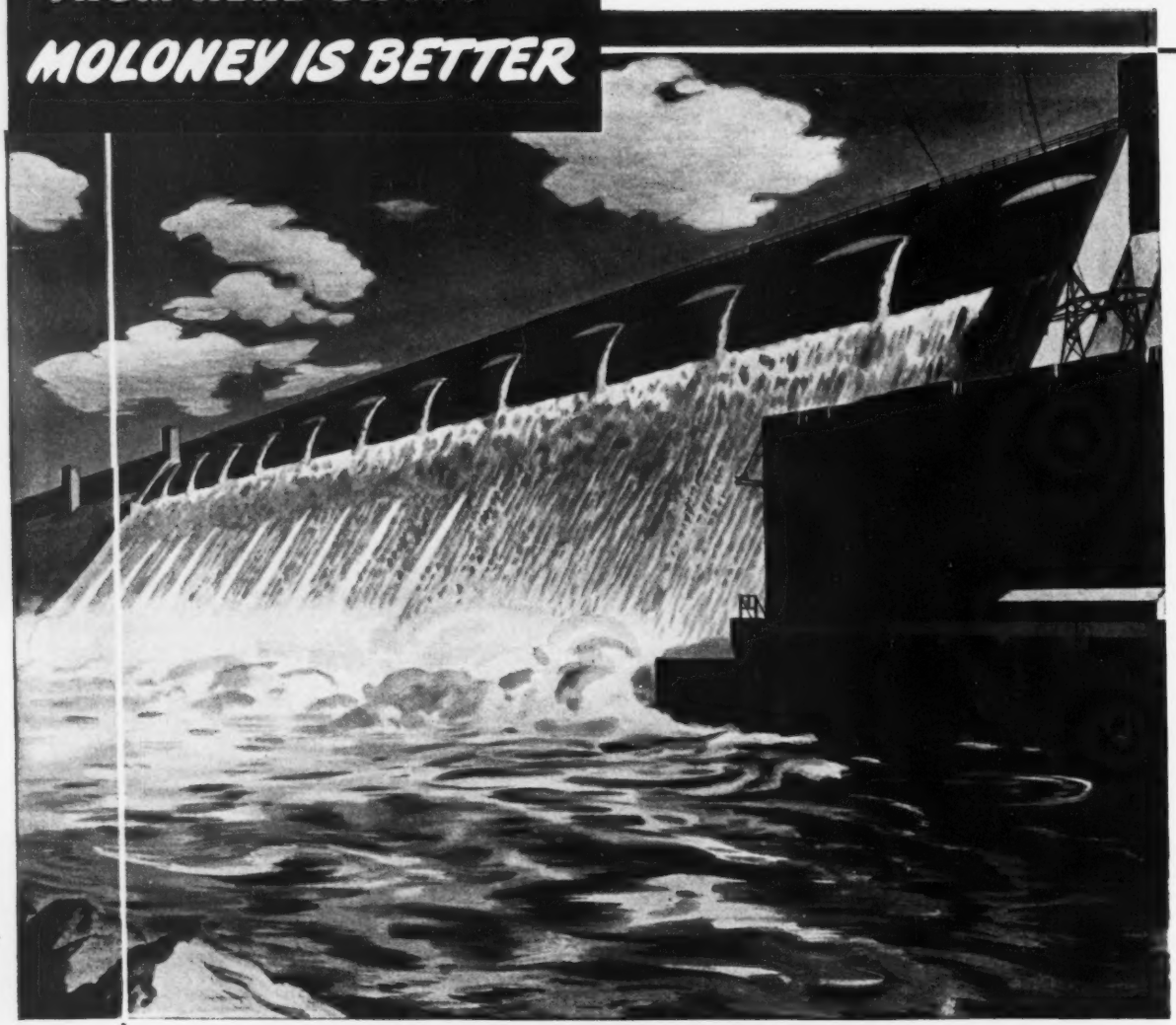
PENNSYLVANIA TRANSFORMER COMPANY

A McGraw Electric Company Division

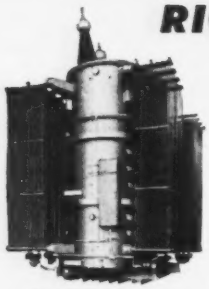
CANONSBURG, PA. • *Greater Pittsburgh District*

FROM HERE ON . . .

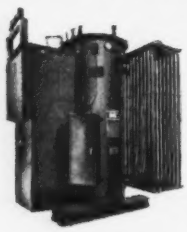
MOLONEY IS BETTER



RIGHT DOWN THE LINE . . .

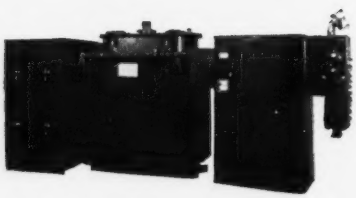


Power Transformers



Load Ratio Control Transformers

Feeder Voltage Regulators and Regulating Transformers



Load Center Unit Substations*

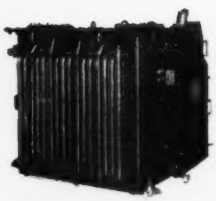
*Indoor and outdoor type

WHEN electrical energy is generated, the utility has the problem of delivering it to the consumer. Efficient transmission and distribution of this energy is an important consideration. To this end Moloney has devoted more than half a century in engineering, research, design and fabrication of better transformers. Moloney's vast facilities are at your disposal to help you develop and expand your system . . . efficiently! Moloney equipment will give better performance with greater reliability and with less maintenance expense . . . for a longer period of time. That is why we say that "from here on . . . *Moloney is better . . . right down the line.*"

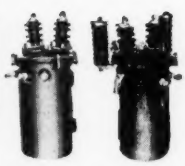
MOLONEY ELECTRIC COMPANY

Manufacturers of Power Transformers • Distribution Transformers • Load Ratio Control Transformers • Step Voltage Regulators • Unit Substations

SALES OFFICES IN ALL PRINCIPAL CITIES
FACTORIES AT ST. LOUIS, MO. AND TORONTO, ONT., CANADA

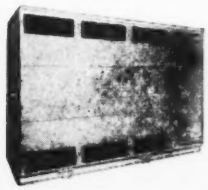


Network Transformers



HiperCore Distribution Transformers**

Askarel Transformers



Air Cooled Transformers

Constant Current Transformers†

Subway Transformers

** Conventional and CSP Types

† Packaged Units and Standard Types

M = BETTER PERFORMANCE
GREATER RELIABILITY
LESS MAINTENANCE

● **Tucked away in the foothills of the Rocky Mountains is Reclamation Bureau's new Flatiron Dispatching Center. From this spot in Colorado, power from Seminoe Dam (cover) Estes Power Project (right) and other USBR installations is routed over the Upper Platte System—an area bigger than New York, Pennsylvania and New Jersey combined**

Command Post . . . Routes Mountain

A newly completed dispatching center tucked away in the mountains near Loveland, Colo., is directing the flow of power and water across the plains of Colorado, Wyoming and Nebraska—a 121,500 square mile area bigger than the states of New York, Pennsylvania and New Jersey put together.

The place is just far enough out of the way to make it necessary to take precautions for emergencies. Two auxiliary power systems are available to operate the headquarters if the main power supply is cut. A small kitchen and a stock of food is maintained to take care for the 17-man crew should the station be isolated.

"It is not a luxury," explained Russ Brown, dispatching superintendent who directs operations. "If this control center were cut off by a blizzard, we wouldn't pick up and go home. This is a 24-hour a day, seven days a week proposition."

Brown's crew dispatches power over a 2,500-mile network of high voltage transmission lines—longest on the Reclamation system—to 130 wholesale customers, and feeds water into canals serving more than a million acres of farm land in the three states.

Into the T-shaped structure, housing administration offices and a semi-circular control room, is funneled a constant stream of information. This material is converted into an exact operation schedule—a schedule that must adhere to river compacts, Supreme Court decrees, federal reclamation laws and U. S. Government contracts with irrigation districts, private electric utilities, Rural Electrification Administration-financed co-operatives, industrial plants and municipal utilities.

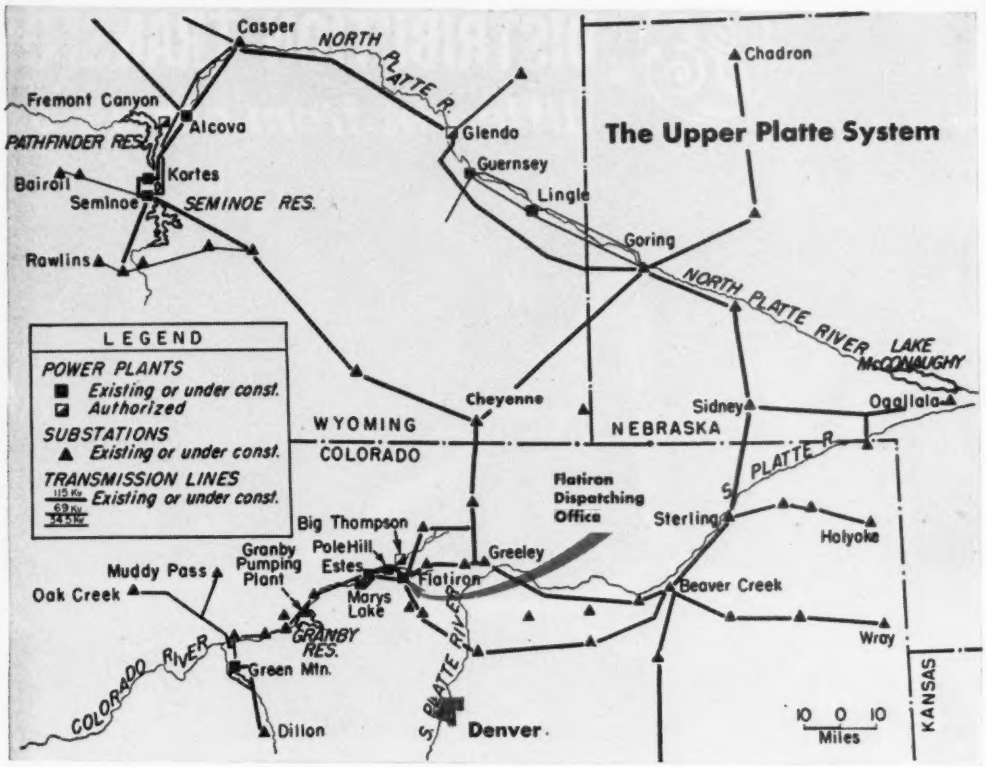
Three-State Net . . . The dispatch of power is a precise operation, based on up-to-the minute reports from stations along the three-state network. The dispatch of water is a longer-range function with the headquarters concerned more with guiding the water flow on a monthly basis rather than hour-by-hour and sometimes minute-by-minute as is done with power.

The Flatiron operation, known officially as headquarters for the Upper Platte System, ties together the water and power functions of two major reclamation projects.

One is the Colorado-Big Thompson. This $164-million job was started in 1938 and is in the final phases of completion. The project, by means of a 13.1-mile tunnel that pierces the Continental Divide, delivers water from the Upper Colorado River Basin on the Western Slope of Colorado to the Eastern Slope for use in supplemental irrigation on 615,000 acres of land in northern and northeastern Colorado. Spotted at strategic points along the course of the water are 11 reservoirs and six power plants.

The 11 reservoirs have a storage capacity of about 1 million acre-ft. Installed capacity at the six power plants is 178,700 kw.

The North Platte Project in Wyoming, on which construction first started in 1905, has five major reservoirs with a storage capacity of 2,286,301 acre ft and five power plants with an installed capacity of 109,600 kw.



Power . . . over Huge USBR Network

Flatiron Headquarters is located at the eastern end of the Colorado-Big Thompson transmountain water diversion system. At Flatiron, work is being rushed on completion of one of the last units of the project. This is a power plant which will have two units each with an installed capacity of 31,500 kw.

In addition there will be a 13,000-hp pumping unit which will deliver water southward from Flatiron Reservoir to Carter Lake Reservoir. This unit will have a rated capacity of 270 sec-ft for a lift of 240 ft. There will be times when the water will be released from Carter to flow back into Flatiron Reservoir. On those occasions, the pump turbine will operate in reverse to generate electric energy from the returning water. The capacity of the pump turbine is 6,750 kw.

Also nearing completion on the Colorado-Big Thompson is the Pole Hill Plant which has installed capacity of 33,250 kw. Both the Pole Hill and the Flatiron plants are scheduled to start generating this fall.

One power plant on the North Platte project is nearing completion. It is the Alcova unit, 30 miles upstream from Casper, Wyo. It utilizes a 170-ft drop of water to the river from Alcova Reservoir, finished in 1938. The plant will consist of two 18,000-kw generators connected to the present outlet tunnel at the dam. It is scheduled to be finished in 1955.

Power from Two Projects . . . Power generated on the Upper Platte System—combining the two projects—totaled 732 million kwhr in 1952. Depending upon water inflow conditions, this year's generation will be from 750 million to 1 billion kwhr.

Dispatching Superintendent Brown directs the 24-hour operations at the Flatiron Headquarters. Directly under him are R. P. Marean, chief power dispatcher, and Victor Koelzer, chief of river operations for the Upper Platte System.

Marean said he knows of no dispatching system quite the equal of the Upper Platte, which he said is characterized by long distances of transmissions and no heavy load centers. It is the longest transmission system in the Bureau of Reclamation.

Operating problems are complicated, Marean said, because all of the power generation is at the western end of the transmission lines where the water flows from the Rockies onto the plains. That situation, combined with the great distances in transmission and light load, causes tremendous amounts of charging current to develop on high lines, he said.

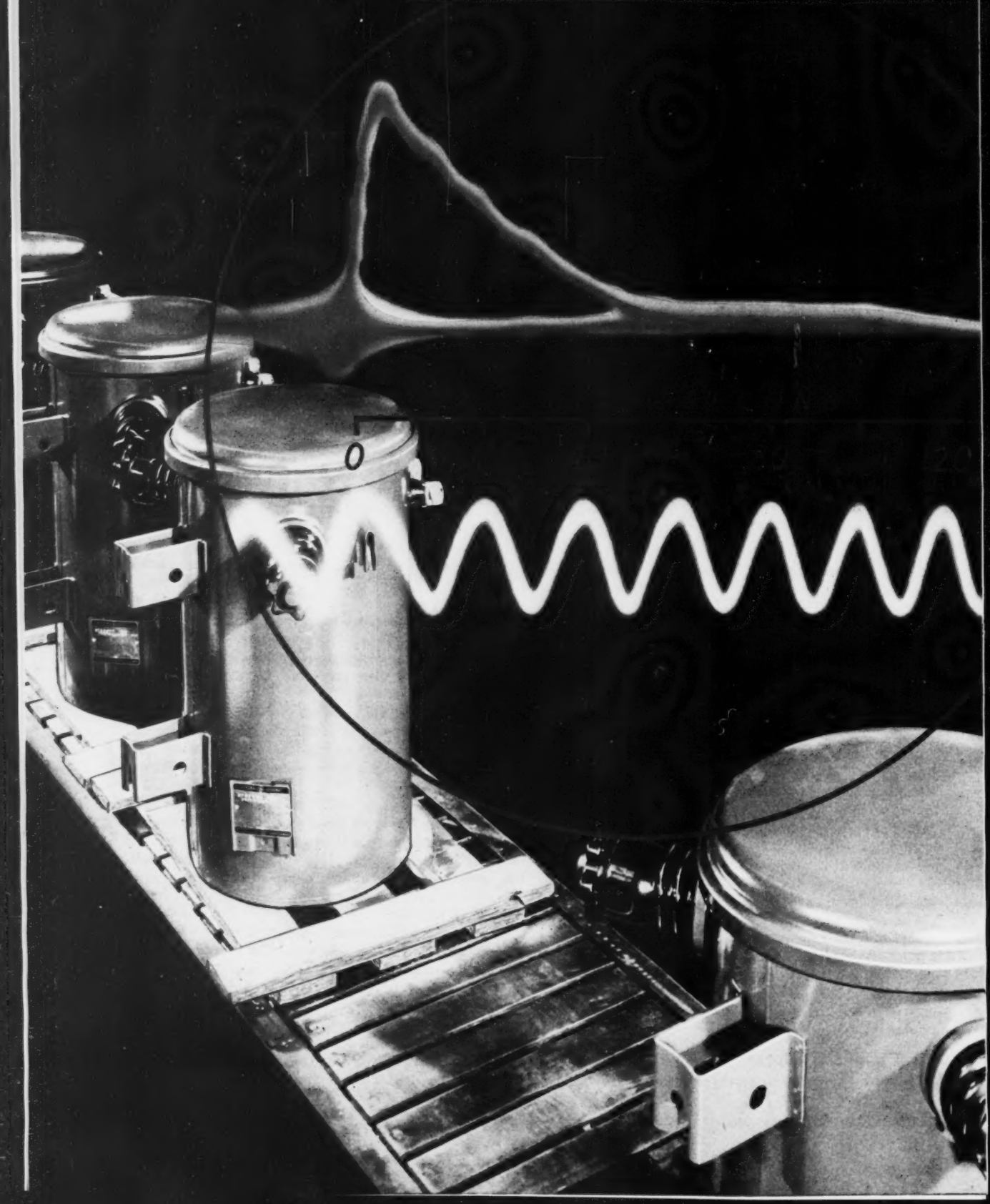
He said that 115 kv placed on the line at the generating end of the system often rises to 135 kv or 140 kv at the end of the transmission lines. The Upper Platte System never loses but always gains voltage during light loads, Marean said.

The high voltage condition, which causes home electrical appliances to burn out if not controlled, has been corrected, Marean said, through the installation of four shunt reactors

(*Continued on page* 18)

DISTRIBUTION TRANSFORMERS

different from others because . . .



....Production-line impulse testing,

the invisible inspector, detects faults before they can occur

Automatic fault detection, standard General Electric procedure in the manufacture of Spirakore* distribution transformers (50-kva and below), is a quality-control measure that assures you "extra years of service."

BOTH HIGH- AND LOW-VOLTAGE WINDINGS are tested on the production line *without lightning protection* of any kind on the transformer. Any hidden weakness is detected automatically and the unit rejected.

The oscillogram superimposed at the left shows the voltage wave shape across a neutral impedance in series with transformer high-voltage winding —no failure indicated. When failures do occur, an electronic circuit actuates an audible signal and the faulty unit is removed from the production line.

REMEMBER... all transformers are not alike . . . compare the G-E plus features in the chart below and see for yourself.

For more information on distribution transformers, either unit-type or conventional, contact your nearest G-E sales office, agent or distributor, or write to General Electric Company, Section 431-3, Schenectady 5, New York.

**Registered trade-mark of General Electric Co.*

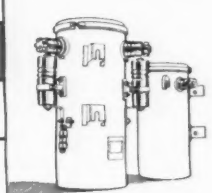
You can put your confidence in—

GENERAL ELECTRIC

ALL TRANSFORMERS ARE NOT ALIKE
(make this simple comparison and see)

FEATURE	General Electric	Mfg. A	Mfg. B	Mfg. C	Mfg. D	Mfg. E
Production-line impulse testing	YES	NO	NO	NO	NO	NO
Nitrile rubber gaskets at all tank openings	YES	NO	NO	NO	NO	NO
Strenicor pressure terminal clamps	YES	NO	NO	NO	NO	NO
Insulated clamp-type connectors on tank wall hv bushings	YES	YES	YES	NO	YES	YES
One-piece cover band	YES	NO	NO	NO	NO	YES
Gapped valve-type arresters	YES	NO	NO	NO	NO	NO
Nationwide company-operated service facilities	YES	YES	NO	NO	NO	NO

1878 75 1953 YEARS OF ELECTRICAL PROGRESS



UNIT-TYPE CONVENTIONAL

"Take your choice G. E. makes both"

CONTROL ROOM PANEL at Flatiron Headquarters gives Chief Power Dispatcher Marean the Upper Platte power situation at a glance. Here he checks a frequency-time error meter

Dispatching Center

(*Continued from page* 15)

at the eastern ends of the lines and the installation of a 40,000 kw condenser.

The condenser, designed to regulate and stabilize electricity throughout Northeastern Colorado, was placed in operation late in March at the Beaver Creek substation near Brush, about 95 miles east of Loveland. Brush is midway between the front range of the Colorado Rockies and the Nebraska border.

The shunt reactors, with a total capacity of 13,000 kva, hold the voltage on the lines during the light load periods. At those times, Marean said, the system keeps in operation generators at Seminoe and Kortes Dams in Wyoming and two other large units to take the charging current off the system.

Designed for Integration . . . While the system is designed for integrated operation with Public Service Co of Colorado, there are only two connections now between the private utility and the bureau lines. A third connection will be made this fall when Flatiron Power Plant is finished.

Marean said the bureau system is "a natural for integration with the Public Service system." He said the bureau's hydroelectric plants have great peaking capacity and that the steam power of Public Service would provide a steady flow for a firm base on the integrated system.

Operations started with temporary equipment at the headquarters, but permanent installations were completed in April. Experiences last winter showed the dispatchers their busiest period comes shortly after 4 pm in December and January when lights are snapped on just about the same time that electrical appliances are turned on for meal preparations.

In a 2½-hour period starting then, the dispatchers receive periodic reports from each power plant and other check points. Each point reports only about every 10 or 15 minutes, but at the headquarters receiving end reports are streaming in every minute or so.

The reports are transmitted over three voice communications systems. One utilizes 11 carrier channels on the high voltage lines. The voice transmission on the lines is by radio waves. The second is short wave radio on five separate frequencies which also permit communication with mobile units. The third is the Bell telephone system.

The dispatchers rapidly correlate these reports and send out orders via the same communications directing the various power plants to send energy into the system or withdraw it, whatever is the demand.

Situation at a Glance . . . Operations in the Flatiron Headquarters are centered before a semi-circular control board 10 ft high. Power operating conditions all over the interconnected system are recorded instantaneously on the dispatcher's control board. The telemetering process records the power generation of each plant in the system, total generation throughout the system, total load, interchange with other connected systems, system frequency and time error.

Also on the semi-circular board is a power system diagram showing and identifying all the power plants, pumping plants, substations, significant switching points and interties with other power systems.

The diagram is painted on curved steel panels. Small, vari-colored magnets are moved about the diagram to show the circuit conditions at the moment.

In addition to its dispatching function, the headquarters prepares an annual plan of operation to serve as a guide for operations through each year on the Upper Platte System starting Nov. 1. Long-range operational studies are also made and from these are prepared future system energy capabilities. The bureau districts also prepare estimates of their future power requirements. Studying those two factors, bureau engineers forecast whether it will be necessary to make outside purchases of power to meet the requirements or if there will be surplus energy generated within the system available for sale.

The long-range studies are also for establishing budget estimates and compiling reports such as those submitted to the Federal Power Commission.

Under consideration by officials now is the establishment of operating committees to assist in achieving the best operation of the integrated system. These committees would include representatives from private power companies, irrigation districts, state engineers and the Bureau of Reclamation.

Aswan Units Planned

VBB, Swedish engineering firm, has submitted plans for 368,000-kw power plant approved for the Aswan Dam on the Nile River in Egypt. New plans would locate plant on the west bank of the reservoir and return water to the river via 2,800-ft tunnels through solid granite. Delivery in 1954 is planned for seven 65,000-hp turbines and two 49,000-kw generators, as well as other equipment.

The Standard of Comparison!

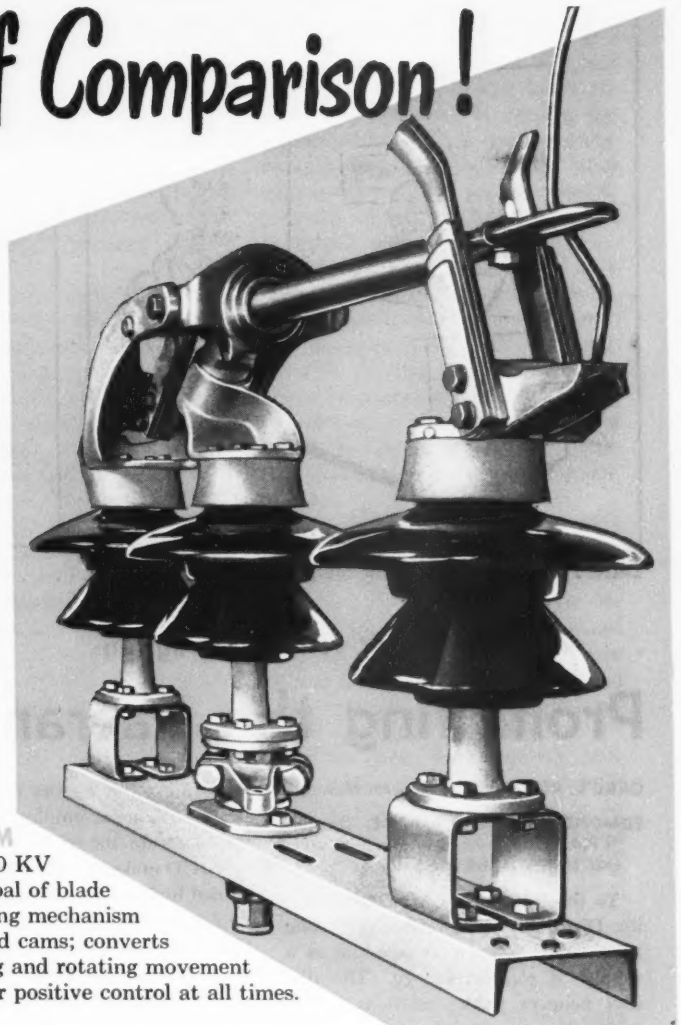
DELTA-STAR'S

MK-40

Outdoor Vertical Break SWITCHES

7.5 KV TO 330 KV

400 TO 5,000 AMPERES



Type MK-40
23 KV-600 amp
Vertical Break
Air Switch

COMPARE THE BLADE MECHANISM—Throughout the entire line from 7.5 KV to 330 KV and from 400 to 5,000 amperes, the same principal of blade mechanism is used. One 45-degree blade actuating mechanism replaces arrangements of cranks, levers, links and cams; converts motion of operating insulator to a vertical lifting and rotating movement of the blade in just the right sequence and under positive control at all times.

COMPARE THE CONTACTS—High pressure silver to copper contacts at both ends of the floating tubular blade. Current carrying members function independently of pressure applying members, the simple and logical way to eliminate flexible shunts.

COMPARE THE CURRENT PATH—Designed throughout the entire range with an absolute minimum number of current interchange surfaces. Direct line from contact to contact. All parts in plain view for visual inspection.

COMPARE THE TEST RESULTS -No design of Delta-Star Switches has ever been put into production on a calculated basis only. Complete laboratory tests are checked in the field under actual service conditions.

Ask for Publication 5212

WHEN YOU WANT THE BEST IN HIGH VOLTAGE SWITCHING EQUIPMENT SPECIFY DELTA-STAR

DELTA-STAR ELECTRIC DIVISION

H. K. PORTER COMPANY, INC.
2437 FULTON STREET, CHICAGO 12, ILLINOIS
DISTRICT OFFICES IN PRINCIPAL CITIES

Letters of appreciation to helpful customers . . .

. . . and courteous driving are phases of . . .

. . . complete public relations program

Promoting the Sacramento MUD

CARL L. RICHEY, Asst General Manager

EDMOND A. COMBATALADE, Director of Public Relations, Sacramento Municipal Utility District, California

To the Sacramento Municipal Utility District a comprehensive public relations program is as essential as a supply of electric energy. The district believes public relations is the composite of impressions the general public has of the entire organization, including employees, policies, accomplishments, and quality of service. To reach all segments of the public it has a three-fold plan aimed at promoting good employee, customer, and community relations.

Employee Relations Are the Base . . . Because employee relations are the foundation of any effective public relations program, the first phase of such a program must deal with employees. The goal is a happy organization fully alert to its public responsibilities.

Good employee morale and effective means of motivation may be built on these factors: Recognizing employees as human beings, making jobs meaningful, maintaining pay scales including fringe benefits on a par with the industry, and good communications between the workers and management.

Putting these factors to work generally will make employees goodwill emissaries for the utility.

SMUD makes sure its emissaries are trained by setting up a program for its employees who work with the public. The program consists of six one-hour conferences at weekly intervals. Groups are limited to 12 to 15 people from different departments. During discussion this job diversity promotes further understanding of problems arising in various departments.

Discussion Topics Listed . . . The topics of the six meetings and the subjects covered include:

"You in a Public Relations Program" covers management's attitude, outlines the program, and ends with a discussion of psychology in everyday terms.

"You and Your Customer" starts as do all following sessions with a review of the material already covered. Customers are analyzed in terms of who and what they are.

The third session consists of the showing of a film, "By Jupiter," which shows a man doing everything incorrectly from a human relations standpoint. Then he relives the same experience doing everything correctly.

"Good Telephone Usage" is a discussion by a telephone company representative of how to get maximum public relations value from phone calls.

"You and Your Telephone" shows how right and wrong telephone manners affect public relations.

"Public Relations on Wheels" stresses courteous driving.

All employees driving company passenger cars must take a driver-improvement course.

Refresher courses are held every six months for "graduates" of the course. Here in groups of eight they explore matters of human relations in dealing with customers.

A short course is offered employees who do not take the six-session course, and these too get refresher courses.

Making the Customers Happy . . . SMUD interprets customer relations as the efficiency with which its service policies are executed by its employees and the customer attitudes engendered by them.

The district betters its customer relations in a number of ways:

Major sales or management representatives call annually on the top officials of firms which are big power consumers to thank them for their business. Good-will calls also are made on mayors, editors, and other leaders in all communities served.

Public offices are made attractive by frequent painting, good lighting, and cleanliness. Desk service is provided for customers with problems or complaints because a person seated in a comfortable chair is more relaxed and less irritable.

Customers who wish to pay their bills in person can go to the main office or to any one of 26 strategically located contract-pay stations. A pay station has been set up in a large department store. It consists of a depository with a rack for envelopes which are kept replenished by store employees. A drive-in pay window at the main office permits customers to pay their bills without leaving their cars; about 8% of the customers pay their bills here.

Bill collectors are known as credit representatives. When past-due balances appear on bills, a small sticker bearing the figure of a smiling lineman is attached. Caption reads, "Have you forgotten us? We're the folks who keep your lights burning and your refrigerator running." A glum-faced lineman on a form used for chronic delinquents tells of a possible reconnection charge if service is disconnected.

Service to Customers Speeded . . . To speed service to customers inquiring by phone as to the status of their accounts, the auditing department uses the unit station system. One clerk regularly handles the same group of accounts so that accurate information can be provided quickly.

Through use of a geographic service index with a visible card system, it is estimated that service has been speeded up about 30% for customers discontinuing service or changing addresses.

Close attention is paid to company-written letters. Electric typewriters are used. Carbon copies of letters are reviewed periodically by management to check on general tone, grammar, spelling, punctuation, and frequency of erasures. Glaring deficiencies or consistently poor samples are reported to the department head.

Whenever a customer performs an unusual service for the district, a letter of thanks is sent as soon as practicable. An example is a motorist reporting a pole-top fire.

Before scheduled interruptions the district not only notifies the customers to be affected but also prepares to meet problems arising from the interruptions. In a poultry-raising area, an interruption was scheduled for the summer when brooders do not require heat. But the chickens do require more water. Because small operators seldom have water storage tanks, the district crews loaded a 400-gal water tank on a truck and served as "water boys" to some 50,000 chickens.

To find out just how well its employees are representing it to the customers, SMUD takes surveys to find out. A two-part postcard is sent to about 1 out of 7 customers following service applications, trouble calls, appliance repairs, high bill or other complaints, and calls of sales personnel. In a recent sampling of 1,000 customers 42% returned the cards. Comments were 92% favorable.

Community Relations Get Attention . . . SMUD defines community relations as the impact of its organization as a unit of the life of the community. The district believes there is a definite need for periodic reminders to the public of the low cost of electricity, expansion programs, and other factors which indicate the utility is constantly seeking to render efficient and reliable service.

SMUD's public relations department works closely with all the newspapers in its service area. News releases covering all the activities of the district are sent out promptly. These are written in newspaper style so that they may be used with very little if any revision. Upon request the department prepares for or works with papers which want special or feature stories. All releases are also sent to local radio stations.

Every care is given to making annual reports attractive as well as accurate. These are sent to businessmen, editors, civic leaders, and others whose influence in the community is considerable. Cartoons and light illustrations are used in reports to show that the utility is not a "stuffed shirt." These cartoons have been received so favorably that their use will be continued.

In a broad sense SMUD considers advertising as a service to the community because greater use of electricity permits service at the lowest possible rates. High standards of ethics are maintained, and every effort is made to keep ads factual and to avoid boasting.

SMUD considers its cooperation with appliance dealers not only as a form of sales promotion but also as a phase of public relations. Tie-in advertising is arranged by sending the dealers advance glossy proofs of district ads on freezers, ranges, and other appliances together with newspaper insertion schedules. Smaller dealers are helped with their ads.

A monthly publication giving news of general interest to the trade, forthcoming promotions and other events, and successful sales techniques is distributed. Mailing pieces are also furnished on occasion. District employees are advised of the operating costs of appliances and highlights of future promotions through employee publications.

The utility participates in cooking schools sponsored by dealers and makes the services of home economists available to them. Dealers are invited to tell the buying public about regularly scheduled demonstrations held at the district's model kitchen so that customers will obtain maximum results from their appliances.

To complete its community relations program, SMUD participates and encourages its employees to do likewise in community fund-raising drives and service club and Chamber of Commerce activities.

AD COPY THEMES

Central Hudson Gas & Electric Corp—Newspaper ad playing up five points of operating and financial progress used five pennants to draw attention to the five paragraphs of copy amplifying the points. The pennants, flying from a rope, were black with titles, such as Operating Income, in reverse.

Connecticut Light & Power Co—"Where do little stockholders come from?" was head on an ad giving information on company stockholders. Illustration was a large stork in line cut towering over little men, women, and children in silhouette.

Middle South Utilities, Inc—"American industry chooses the Middle South" was head on an ad illustrating three products made in that region. Each product bore a tag reading "Made in the Middle South by (manufacturer's name)". The ad does not carry the name of the holding company but carries those of the four subsidiaries.

DAVIS SYSTEM of Bureau of Reclamation will deliver 180,000 kw of power by displacement to Arizona Public Service after company's new 200,000-kw Saguaro Steam Station goes into operation. Take-off points on system include substations at Prescott, Yuma and Phoenix

Contract Integrates Arizona Systems

Way is now clear to integrate the output of Arizona Public Service Co's 200,000-kw Saguaro steam plant, 94 miles south of Phoenix, into the transmission system which brings up to 180,000 kw of power from Davis Dam to Arizona.

Interior Secretary Douglas McKay late last month approved a contract which allows Bureau of Reclamation to "wheel" power from the dam and the company steam plant thus bringing firm power to Arizona connections. Arizona Power Authority had been negotiating with the bureau for more than a year for the wheeling agreement. The authority is now expected to conclude quickly negotiations with Arizona PS for integration of the steam plant generation into the bureau's transmission system.

A 43-mile link of 115-kv line is needed to connect the steam plant with the existing bureau transmission system. The House Appropriations Committee approved a $2.1 million appropriation to permit the bureau to build this line, but instructed the Secretary of Interior not to use the money if Arizona Public Service decides to build the link.

Under terms of the Power Authority-USBR agreement, transmission of all energy will be charged at a rate of ½ mill per kwhr delivered at a number of substations on the bureau's lines.

Location of the two-unit Saguaro plant at the southernmost end of the

Davis System was dictated by two factors—rapid growth of load on the company's system and capacity limitations of the Arizona portion of the Davis System, which carries power developed at three Colorado River hydroelectric plants, Hoover, Davis and Parker Dams. First unit at Saguaro is scheduled for completion in early spring of 1954, the second about a year later.

By displacement of up to 180,000 kw of power, energy will be taken off the system by Public Service at seven substations, at Yuma, Prescott, Phoenix, Maricopa, Casa Grande, Oracle and Cochise (see map). Transmission losses will be shared proportionately by the company, the authority, and the bureau on both a power and energy basis.

Authority's Role . . . APA's right to transmit power and energy for Public Service on the Davis System is given under a contract signed with the federal government. Under the transmission agreement between APA and Public Service, the utility will pay ½ mill per kwhr for all energy transmitted as determined under contract provisions. However, it is provided that in any year beginning June 1 and ending on May 31, there will be no additional transmission charge after these amounts have accrued:

1954-55	$200,000
1955-56	250,000
1956-57	300,000
1957-58	350,000
1958-59 and thereafter .	400,000

Certain additional facilities will be required for the Davis System in connection with wheeling of energy from Saguaro Station and other sources available to Public Service in Arizona. Those facilities which will benefit the Davis System as a whole will be provided by the bureau. Remaining additional facilities will be needed for service to particular purchasers and will be provided by the federal government or APA as requested from time to time by the utility. Commencing with the year beginning June 1, 1955, Public Service will pay the authority monthly an amount equal to 1/12 of 7½% of the original cost of such facilities as they request.

Original cost will be that on books of account of the federal government or the authority on June 30 of each year. Facilities needed for service to particular contractors will be revised each year to show any additions, changes or deletions agreed to by parties concerned.

Arizona Public Service has agreed under a letter of intent and as part of the transmission agreement to sell to APA up to 30,000 kw of power from Saguaro Station. When the first unit is placed in commercial operation, 15,000 kw will be made available. Remainder will be supplied during a ten-year period following the effective contract date. Included is a provision calling for two years' written notice of the amount required by the authority.

Saguaro Situation . . . When decision was made to build Saguaro Station, Public Service, the power authority and the bureau recognized the beneficial effect of locating it at the southern end of Davis System. The bureau essentially has completed construction of the Davis Dam Project in California, Arizona, and Nevada. In connection with this project, it has constructed a transmission system which connects to transmission systems of the Yuma Project, the Parker Dam Project, and other U. S. projects under bureau jurisdiction. All these transmission lines, known as the Davis System, are shown on the accompanying map.

Two Divisions Created . . . Under the new contract, the system as shown is divided into Eastern and Western Divisions. Eastern Division comprises that portion east of Parker and Davis Dams and consists of two 161-kv lines from Parker to Phoenix, a 230-kv line from Davis to Coolidge, two 115-kv lines from Phoenix to Tucson, a 115-kv line from Coolidge to the Saguaro Station, and a 115-kv line from Tucson to Cochise. Remainder of the system will be known as the Western Division.

The Power Authority Act of 1944 created APA and gave it powers, along with others, to receive allotments of and to contract for electric energy developed on the main Colorado River stream by Arizona or the United States or any agencies thereof, to handle and administer this energy, and to enter into interconnection or pooling agreements with other distributors of electric power.

Other powers given APA include the right to cooperate with existing distributors in use, interconnection or utilization of suitable transmission lines or other facilities for distribution and operating purposes, and to purchase electric energy directly from U. S. departments and agencies or other public or private sources. To accomplish these purposes, APA is empowered to act jointly or separately with federal groups or any person or operating unit.

By agreement with the bureau, the authority determined that wheeling of energy for Public Service was an integral part of a plan to permit pooling of resources by itself and its contractors. It was further determined that power by displacement will permit most economical operation of Davis System to carry out provisions of the 1944 act.

Conference on Relaying Held at Illinois Institute

Sixty representatives of midwestern power companies called in session at the Illinois Institute of Technology on April 30 and May 1 for a conference on relays, sponsored by the institute's AC Network Calculator Laboratory.

Generator protection, particularly for loss of field, was discussed by W. C. Morris, General Electric Co, who described a mho type of relay for this purpose. This relatively new relay functions only in case of loss of excitation and no other condition comes within the range of the relay's characteristics.

W. E. Glassburn, Westinghouse Electric Corp, discussed the problems of periodic tests to insure proper relay performance. He said that practice must be determined by experience on each system.

A relay phase shift of 90 deg for relaying simultaneous faults was recommended by Miguel Xavier, graduate student of Illinois Institute of Technology.

Dean W. A. Lewis, IIT, said there is some hope of relaying simultaneous faults more accurately with a ground distance relay scheme than had been anticipated.

Unbalanced faults on generators make it desirable to provide back up protection said E. T. B. Gross, IIT. Gross pointed out that in general back up protection has not been provided and not too much difficulty has been experienced but some recent experiences indicate that it is needed to protect for unbalanced faults.

California Backs Trinity Plan

State endorses river project Bureau of Reclamation seeks to build but disagrees with proposed USBR rates

California has given its endorsement to the $207,334,000 Trinity River project in the northern end of the state.

California's views were submitted last month after a study of a report prepared by the Bureau of Reclamation.

However, the state report, backed by Gov Earl Warren, disagrees with the bureau's figures on what should be charged for electricity generated by the Trinity power plants and the water supply which would be available.

USBR Proposes Integration . . . The bureau recommends the project be integrated with the Central Valley Project. The state report, prepared by State Engineer A. D. Edmonston, finds that a separate Trinity River project would be feasible.

"Integration of the Trinity River Division project with the Central Valley project," the state report reads, "could financially aid the latter project if proper and adequate rates for water and electric power made available by the Trinity River Division works were established.

"To accomplish this a rate for the electric power substantially higher than that given in the financial analyses in the report under review (USBR) would be required."

An amount of 1,616,700,000 kwhr is given in the bureau's report as the average annual net power output attributable to the Trinity project, including output from a steam plant. Deducting for transmission losses, the average annual net power output given in the bureau report as available for sale becomes 1,511,000,000 kwhr.

Rate Analysis . . . To provide for payment of the $8,586,700 of annual cost chargeable to power features, the state analysis points out, would require sale of the electric energy at a price of 5.7 mills per kwhr as compared to the sale price of less than 5.1 mills per kwhr, on the average, proposed in the bureau report, and about 4.4 mills per kwhr provided for in some of the recent contracts entered into by the reclamation service for CVP power.

A higher rate than 5.7 mills per kwhr, the state report noted, would be required if 38% of cost of the steam plant were allocated to the Trinity project. And a still higher rate would have to be charged if revenues from power sales are to provide financial aid to irrigation features or to CVP if the operations of the two projects are integrated.

The federal government's plan for the Trinity development include:

- Trinity Dam and a power plant with a capacity of 75,000 kw.
- Lewiston Diversion Dam, the diversion structure for Tower House Tunnel, and a 2,000-kw power plant.
- Tower House Tunnel extending from Lewiston reservoir to Tower House power plant (66,000 kw) on Clear Creek.
- Tower House Diversion Dam across Clear Creek to capture and reregulate the releases from Tower House power plant and divert them into Matheson tunnel.
- Matheson tunnel, capacity 1,700 cfs, length 9 miles extending from Clear Creek to Matheson power plant (75,000 kw) on the edge of Keswick reservoir below the CVP's Shasta Dam.
- Switchyards and transmission lines.
- Steam-electric plant additions, consisting of a 70,000-kw enlargement of CVP's delta steam-power plant.

The state's recommendation is expected to aid materially in efforts to get funds from Congress for the project.

Pennsylvania P&L Wins Sales Award

The Howard G. Ford award of the Sales Managers Association of Philadelphia went this year to Pennsylvania Power & Light Co. The award has been made each year since 1937 to the company in the United States which in the opinion of the award committee has made the most outstanding contribution to improvement in distribution through good sales management.

Above, Charles E. Oakes, PP&L president, second from left, receives the award from M. Sidney Lebair, left, association president; Charles M. Hodell, association vice president; and Thomas Jones, award committee chairman.

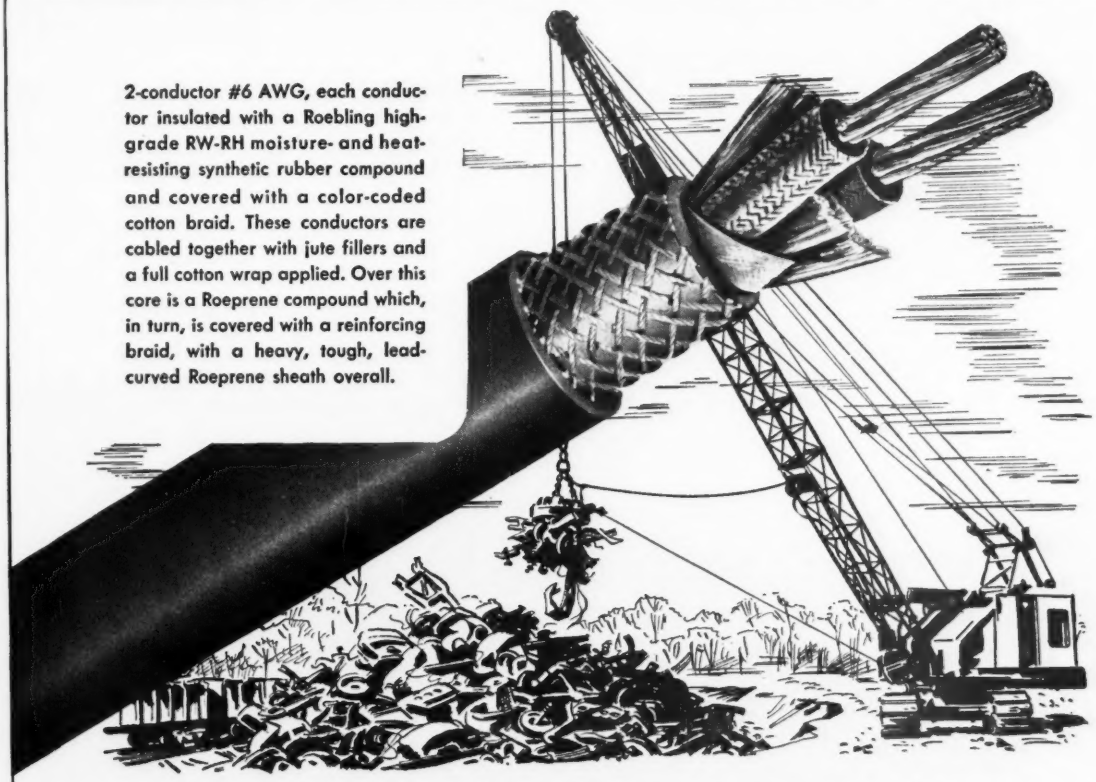
As featured speaker at the award dinner, Gwilym A. Price, president of Westinghouse Electric Corp, said:

"If the time ever comes when we can wisely and safely reduce our military expenditures, no segment of the American population—except, of course, the fighting soldier—will welcome it more than the American industrialist."

Industrialists, he said, naturally are concerned about the effect of a sudden military cut-off on industry and the economy as a whole. But, he added, the businessman would welcome a sane world in which he could develop his enterprise to useful peacetime production of goods.

ROECLAD PORTABLE POWER CABLES

2-conductor #6 AWG, each conductor insulated with a Roebling high-grade RW-RH moisture- and heat-resisting synthetic rubber compound and covered with a color-coded cotton braid. These conductors are cabled together with jute fillers and a full cotton wrap applied. Over this core is a Roeprene compound which, in turn, is covered with a reinforcing braid, with a heavy, tough, lead-curved Roeprene sheath overall.



Roebling Roeclad Lifting Magnet Cables outlast all others 2 to 1

Roebling Roeclad Lifting Magnet Cable is engineered and produced to withstand rough treatment and to give long service life. The design of this cable is based on field experience of more than 30 years.

Exhaustive tests performed in Roebling laboratories to prove the superiority of Roeclad Lifting Magnet Cables included fatigue and impact tests of representative samples.

In a fatigue test, cable samples after being subjected to more than 2,000,000 reversals—half at room temperature and half at 0°F.—showed no damage to either of the two conductors.

In impact tests, it required over 3000 blows of a 20-lb. weight dropped 5½ inches, 25 times per minute, to cause failure of a two-conductor #8 AWG Roeclad Lifting Magnet Cable.

And a report from an engineering company which has a large number of machines equipped with magnets is typical of the entire field... that Roeclad Lifting Magnet Cable out-performs competitive cables by at least 2 to 1.

Through unending research and development, Roebling's complete electrical line is constantly being improved. You can always buy Roebling with assurance of top efficiency and economy. John A. Roebling's Sons Corporation, Trenton 2, N. J.

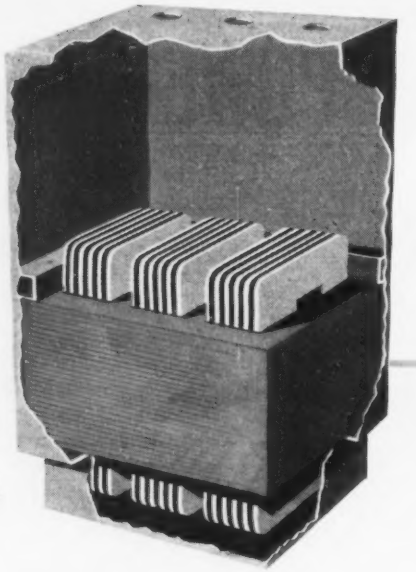
Subsidiary of The Colorado Fuel and Iron Corporation

ROEBLING

ATLANTA, 934 AVON AVE • BOSTON, 51 SLEEPER ST & 5 PITTSBURGH ST • CHICAGO, 5525 W. ROOSEVELT RD • CINCINNATI, 3253 FREDONIA AVE • CLEVELAND, 13225 LAKEWOOD HEIGHTS BLVD. • DENVER, 4801 JACKSON ST • DETROIT, 915 FISHER BLDG • HOUSTON, 6216 NAVIGATION BLVD • LOS ANGELES, 5340 E. HARBOR ST & 120 S. HEWITT ST • NEW YORK, 19 RECTOR ST • ODESSA, TEXAS, 1920 E. 2ND ST • PHILADELPHIA, 230 VINE ST • PITTSBURGH, 1301 CLARK BLDG • ROCHESTER, 1 FLINT ST • SAN FRANCISCO, 1740 17TH ST • SEATTLE, 900 1ST AVE S. • ST. LOUIS, 3001 DELMAR BLVD • TULSA, 321 N. CHEYENNE ST • EXPORT SALES OFFICE, TRENTON 2, NEW JERSEY

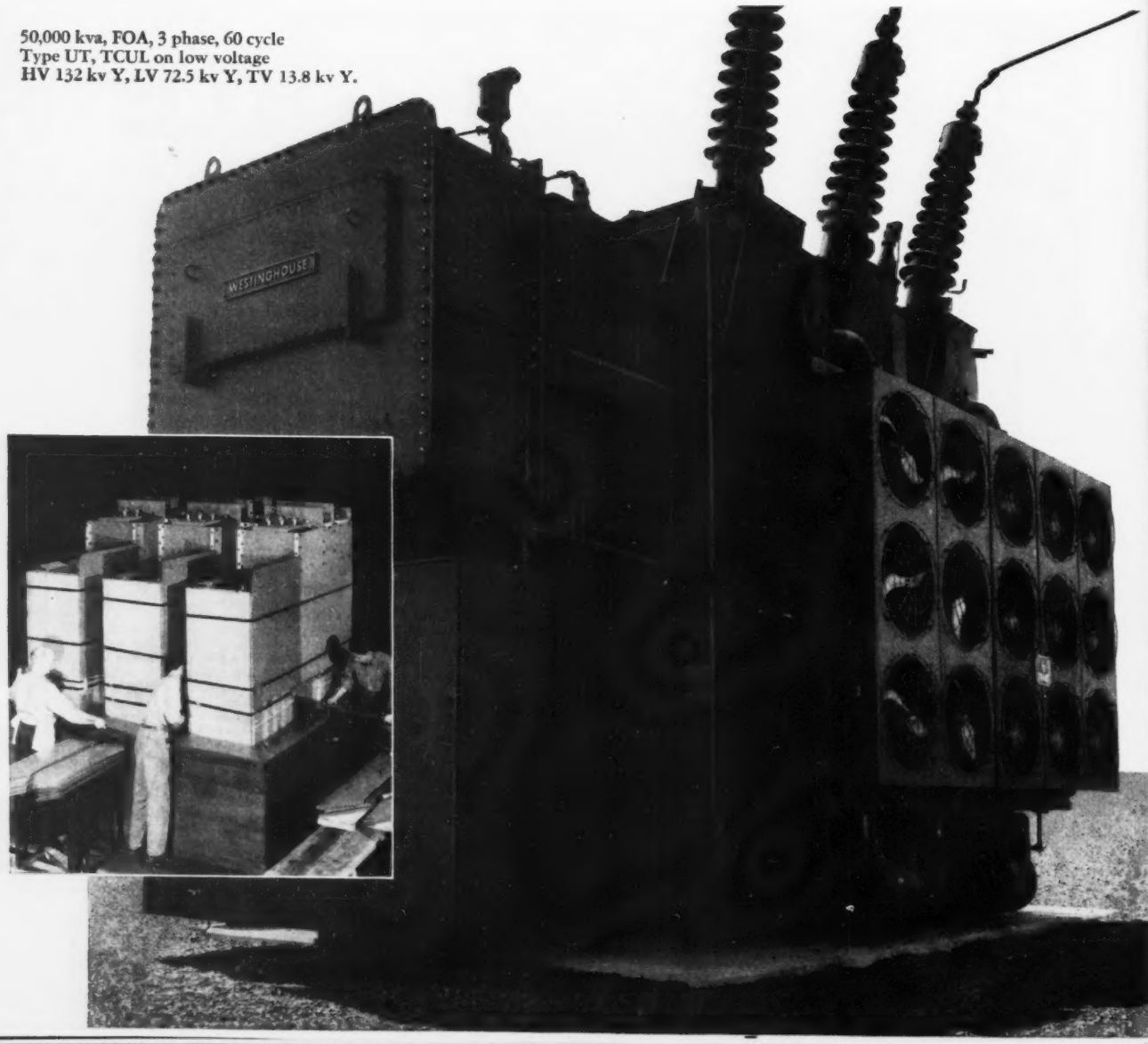
CF&I

JAR ROEBLING



This design under

50,000 kva, FOA, 3 phase, 60 cycle
Type UT, TCUL on low voltage
HV 132 kv Y, LV 72.5 kv Y, TV 13.8 kv Y.



offers more dependability all operating conditions

The Form-Fit design of Westinghouse Power Transformers gives added assurance of maintaining a high level of performance. One reason is that the core surrounds, supports and protects the coils, giving them added strength . . . both electrical and mechanical.

The laminations of the core are tightly clamped in position by channels welded to the inside of the tank. The area of the coils extending beyond the protection of the core is securely braced to the tank by hardwood wedges, and the individual coils are separated by oil-impregnated pressboard. This not only serves to maintain firm spacing between the coils, but also, because of the strategic positioning of the spacers, directs the flow of coolant for maximum efficiency.

Form-Fit construction utilizes relatively few coils. High and low-voltage sections are interspersed, so that electromagnetic reaction of the sections is reduced. The net result is a design that has superior mechanical strength to withstand short-circuit stresses, yet properly distributes electrical surges.

Add to this the advantage of more efficient cooling, with lower temperature gradients, and it's easy to see why Westinghouse Form-Fit Transformers offer greater dependability under all operating conditions. Your Westinghouse representative will be glad to discuss the application of these transformers to your individual power problems, or write for Booklet B-4142-A. Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa.

J-70640

YOU CAN BE SURE...IF IT'S

Westinghouse

POWER TRANSFORMERS

1. Making contact by phone, utility advisor . . .

2. Arranges personal call at home of prospect . . .

Person to Person Calls Sell Wiring

Five home advisors sold 695 modernization jobs in 1952 for Iowa-Illinois Gas & Electric Co

Iowa-Illinois Gas & Electric Co has sold 1,003 wiring modernization jobs, 695 of them in 1952, among its 60,000 residential customers in the Quad Cites area. To determine whether the program was paying off the company surveyed 100 customers three years after their rewiring jobs were done. Increase in kwhr sales had been 48%, as compared with a 25.8% area average for the same three years.

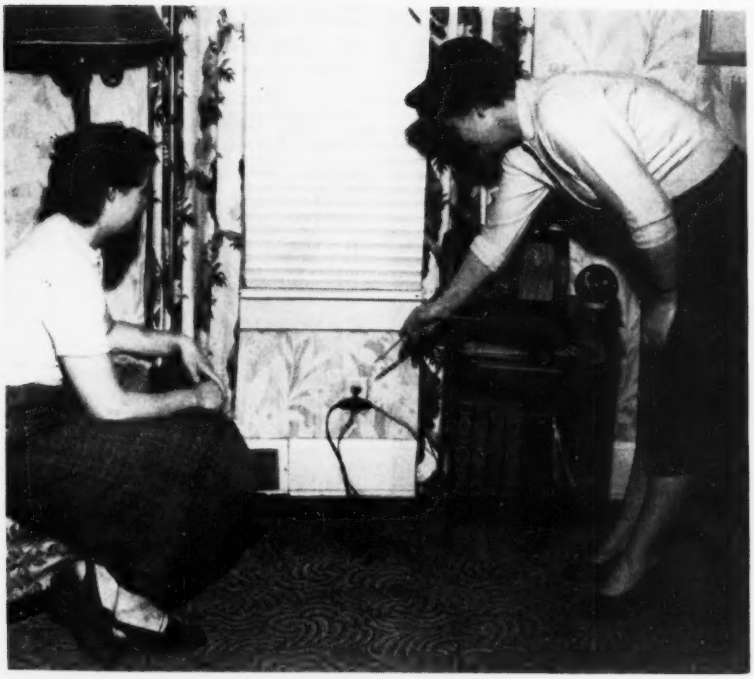
The organization for carrying out this program consists of eight people. They include a supervisor, a technician, who makes all layouts, a record clerk who keeps kilowatt hour records of homes rewired, and five home wiring advisors who sell complete rewiring of the home.

Advisors are carefully selected. They are mature women with selling experience, preferably in specialty selling. They are given one week of training, three days of which consist of study and instruction. Material used is that prepared by the Adequate Wiring Bureau. When they start their sales work, they are given continuous on-the-job supervision.

Get Prospects and Sell . . . Prospects are secured through newspaper ads carrying theme of home wiring, contractors, electrical inspectors, fire marshals, no-light calls, employee tips, purchases of new appliances, and some cold canvassing.

Each advisor has an assigned territory. Leads from each territory are passed on to the proper advisor who calls on the prospect and tells the wiring modernization story as demonstrated in the accompanying pictures.

4. about the value of three-wire services . . .



3. to tell of octupus wiring and its hazards, . . .

5. and how to plan wiring for safe living

Adequate Wiring...

. . . selling drive undertaken by Chicago Electric Association to spread over entire year

Chicago Electric Association has adopted an overall master program for selling adequate wiring, according to Leonard Ewald, chairman of the adequate wiring committee.

Dodge Reports will be used to secure names of home builders in Chicago and suburbs. Letters will be sent to builders and/or individuals offering free professional layout service. The industry will furnish qualified personnel for the field work this program will require.

Speakers programs and props will be arranged for a variety of talks on adequate wiring, designed for presentation to women's groups, service clubs, and other organizations.

A conference for utility men has been scheduled for the third week in May. It will be patterned after a similar conference held last year.

Electrical contractors will meet the fourth week in May. Industry speakers will discuss what has been accomplished by adequate wiring promotion and what is planned for the future.

In September there will be an all-industry meeting. All groups interested in adequate wiring will be invited to attend. These will include wholesalers, contractors, utility men, and dealers.

The entire adequate wiring program will be publicized in the consumer press and plans for radio and television promotion are being considered.

Portable Ironer

To help retailers spearhead spring and summer home laundry sales, Hotpoint Co has announced a new low-priced portable ironer which weighs only 30 lbs. The new ironer has a roll 5 inches in diameter and 22 inches long. The temperature of the chrome-plated scratch-proof shoe is controlled by an adjustable thermostat. The roll can be stopped for pressing and the shoe can be tilted for steaming. Shoe pressure can be easily increased or decreased. Offered along with the ironer are a chrome-plated roll-away stand and posture fold-away chair.

INFORMATION AIDS and booklets for Rocky Mountain Electrical League's public relations program are explained to E. H. Norling, GE, by Warren Terry, Home Light & Power, Greeley, Colo.

Local PR Programs Vital . . .

. . . Rocky Mountain Electrical League is told at annual spring conference. Bright business prospects viewed

"Public relations activities should be a central part of our industry and local company thinking and planning." With this in mind D. B. Hyer, Jr, president of Southern Colorado Power Co, Pueblo, presented benefits and reasons for a local public relations program to members of the Rocky Mountain Electrical League at their spring conference.

Preliminary plans for base-load steam plants in Wyoming and business prospects for the immediate future also were considered during the meeting in Denver, April 27-28.

Urging that all RMEL members join in a coordinated information program, Hyer said the plan would serve to:

- Stimulate local public relations activities.
- Provide material for local use by members.
- Promote employee understanding of economics of the industry and free enterprise.
- Inform public of contribution of the industry to our high standard of living and of the financial needs of the industry to meet plans for expansion.
- Aid educational institutions by providing factual information.
- Encourage opposition to encroachment of government in field of private enterprise.

For these reasons there is no more opportune time than the next few years to present the industry's story, Hyer contended. Expansion of the industry calls for public understanding of its program if it is to continue to grow and prosper, he said.

Some quarters hold the trend toward government in business has reached its peak, he said, adding that the trend may be reversed considerably if business will do its part in promoting better understanding.

The league's information program will be based on local members exchanging information and telling their story to customers, employees, and stockholders. Also, use will be made of information provided by national industry associations.

Federal Structure Outlined . . . About 58,000 kw of steam capacity will be needed to firm up a scheduled total federal hydro capacity of about 210,000 kw in Wyoming by 1960, said H. Hugh Lenhart, RMEL president and vice president and general manager of Cheyenne Light, Fuel & Power Co. Private utilities should finance, build and operate this steam capacity, he added. At present about 75% of private company requirements in Wyoming are met through purchase of power from Bureau of Reclamation projects in the state. These projects now total about 102,000 kw.

For some time, continued Lenhart, the six private companies in Wyoming have been considering construction of steam plants. Full cooperation in this venture has been offered by the bureau as well as other federal and state agencies. Earlier in the year a preliminary report was made by Ebasco Services, Inc, which indicated 6 of 15 possible sites for the plants show promise.

Hopeful Outlook . . . Prospects for business look bright and hopeful even after defense spending drops, according to Charles E. Brokaw, regional director of the U. S. Department of Commerce, Denver. He predicted a tapering off of military spending to a plateau of defense maintenance over a period of years, and that expenditures on plant expansions should continue after arms spending peak is passed to take care of a large backlog of civilian plant and equipment. Spending for plant during 1953 should equal 1952, with a good year to follow in 1954, Brokaw stated.

Potent factor in insuring a bright economic picture, he continued, is an all out sales promotion by all facets of industry. Illustrating how far the country must go to make an all-out effort, he stated that present national sales force in relation to gross national product is the smallest in history.

No one can say when the historic cycling of our economy will bring a depression, Brokaw remarked. However, when it does come we must apply forces to lessen the dip. Existing forces which, he said, will help include social security and unemployment insurance.

Provide service continuity by AUTOMATICALLY transferring load to an alternate feeder — with G & W OIL SWITCHES

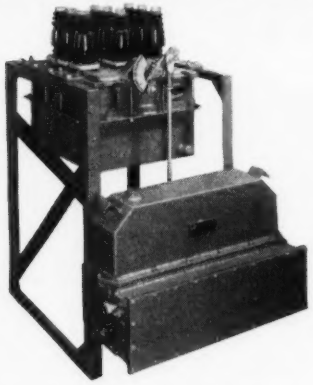


Fig. 1—Type "DT" double throw oil switch, 7.5 Kv.—Model "E" mechanism. Style "ES" disconnects permit isolating the unit or by-passing one feeder.

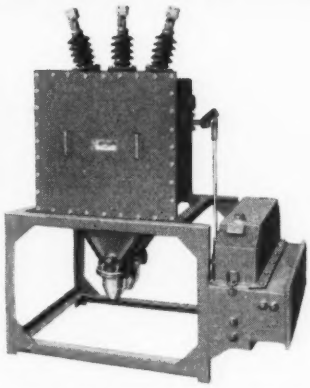


Fig. 2—Type "RAD" double throw oil switch, 15 Kv.—Model "E" mechanism. Cableheads for two feeders on bottom. Capnut load outlet porcelain bushings on top.

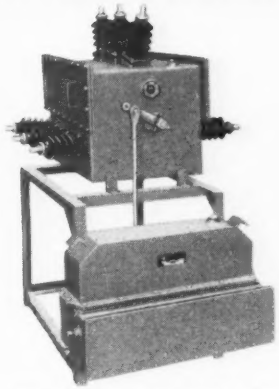


Fig. 3—Type "RAD" double throw oil switch, 15 Kv.—Model "E" mechanism. Capnut porcelain bushings for feeders (two sides) and for load (top).

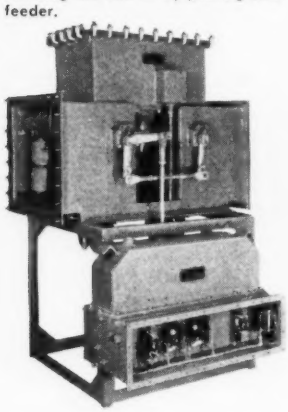


Fig. 4—Type "DRA" two single throw oil switch unit, 7.5 Kv.—Model "E" mechanism. Air break link isolating compartment on top.

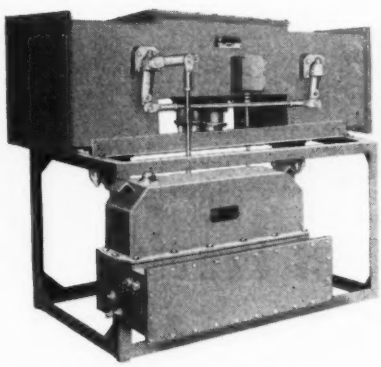


Fig. 5—Type "DRA" two single throw oil switch unit, 7.5 Kv.—Model "E6" mechanism. Air break link isolating compartment in middle.

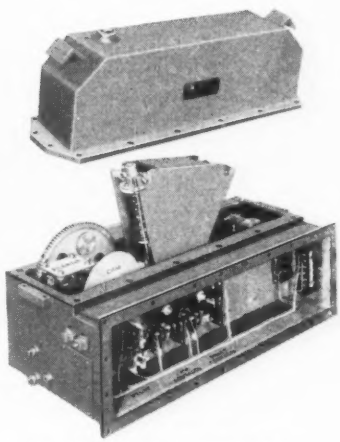


Fig. 6—Model "E" Automatic transfer mechanism—universally applicable to different types of oil switches.

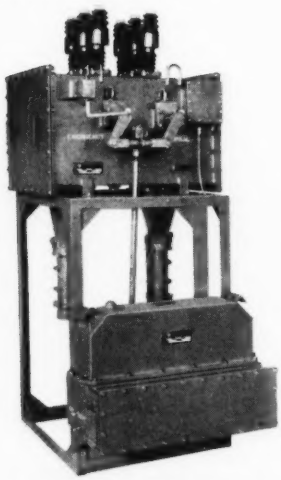


Fig. 7—Type "DRA" two single throw oil switch unit, 7.5 Kv.—Model "E" mechanism. Style "ES" disconnects (paralleled) permit isolating either feeder (paralleled for load-on top).

D531

G & W OIL SWITCHES—

400 ampere load break, 7.5, 15 and 23 Kv.

Available in double throw or two single throw units to meet standard and special requirements. Switch isolating provisions are optional. Switches are furnished with potheads or terminating compartments for underground cable connections—or the style "ES" disconnecting or Style "T" capnut porcelain bushings for overhead connections. Switches and operating mechanism are factory assembled on a mounting frame as a unit. Field installation ordinarily requires only making the feeder and load connections.

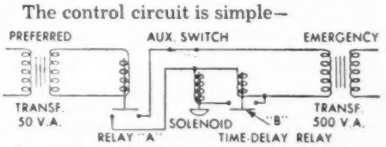
With Model "E" mechanism, G&W oil switches provide for—

- **AUTOMATIC THROWOVER** — from preferred to emergency feeder. When preferred feeder voltage drops to 60% of normal.
- **AUTOMATIC THROWBACK** — from emergency to preferred feeder. When preferred feeder voltage has been restored—for 2½ minutes.

MODEL "E" MECHANISM—

Contained in watertight case, with relays in the front compartment. The oil switch throwover and throwback is accomplished by two separate springs. The springs are compressed by a motor, which rotates the spring housing. Springs are released by a solenoid, energized through relay contacts, which unlatches roller bearing triggers.

The control circuit is simple—



Control transformers may be located in oil switch tank of Types RAD and DRA.

Send for further data.

G & W ELECTRIC SPECIALTY CO.
7780 Dante Ave., Chicago 19, Ill.
Cable Terminating, Connecting and Sectionalizing Devices

Representatives in principal cities of U.S.A.
In Canada—Powerlite Devices Ltd., Toronto and Montreal

L-M's NEW PID
5 KV 100 ampere
intermediate duty cutout.
Reflective markings easily seen from the ground identify the door and cutout. Doors are easily removed and replaced with a switch stick, for safety.
Cutout rating and date of manufacture sandblasted into side of box for permanent identification.
5000 V
100 A.
LM-52

L-M's New PID Cutout Provides Up To 166% Higher Interrupting Capacity At 20% Lower Cost

Costs 20% less than standard 100 ampere cutout; interrupting capacity 166% higher at 2.5 kv (8000 amperes), 66% higher at 5 kv (5000 amperes). Box will accept all standard 50 ampere doors, thus permitting one box to be used for both 50 and 100 ampere service. Also takes 200 ampere switch blade door.

L-M's PID Cutout is designed to provide a 100 ampere intermediate duty cutout at an appreciable saving over standard 100 ampere cutouts. Boxes are smaller and more compact than standard 100 ampere cutouts—they are the same size as a 50 ampere cutout but terminals and contacts are heavier. Thus the cutout will take any of L-M's 50 ampere doors, as well as the 100 ampere intermediate duty and 200 ampere switch blade door.

The non-disconnecting door provides positive link ejection and circuit interruption even on low current faults.

Both cutout and switch blade doors can be removed and replaced with standard switch sticks, providing additional safety.

Cutout and disconnect switch doors are easily identified from the ground by the reflecting markings on the doors. Rating and date of manufacture are sandblasted into sides of box for permanent identification.

Get Details on L-M Fuse Cutouts

L-M offers complete families of open and closed type cutouts to meet a wide range of requirements. Interchangeable doors offer low first cost and economical capacity increases as loads are increased. For complete information ask the L-M Field Engineer or write for bulletins. Line Material Company, Milwaukee 1, Wisconsin (a McGraw Electric Company Division).

LM® **LINE MATERIAL**
fuse cutouts

103

Complete Coordinated Equipment for Distribution Today

UTILITY DATA SHOWS OUTSTANDING 99.94% PERFORMANCE RECORD FOR L-M VALVE TYPE LIGHTNING ARRESTERS

Six-year performance records of a large midwestern utility show that L-M valve type lightning arresters have an exceptionally good operating record. With a total of 41,175 service years, only 23 L-M arresters had Isolator* operations while in service—there was only one instance of radio interference from L-M arresters—and of 613 arresters brought into the shop for electrical testing, not one was found faulty.

Here are the records for the years 1945 through 1950.

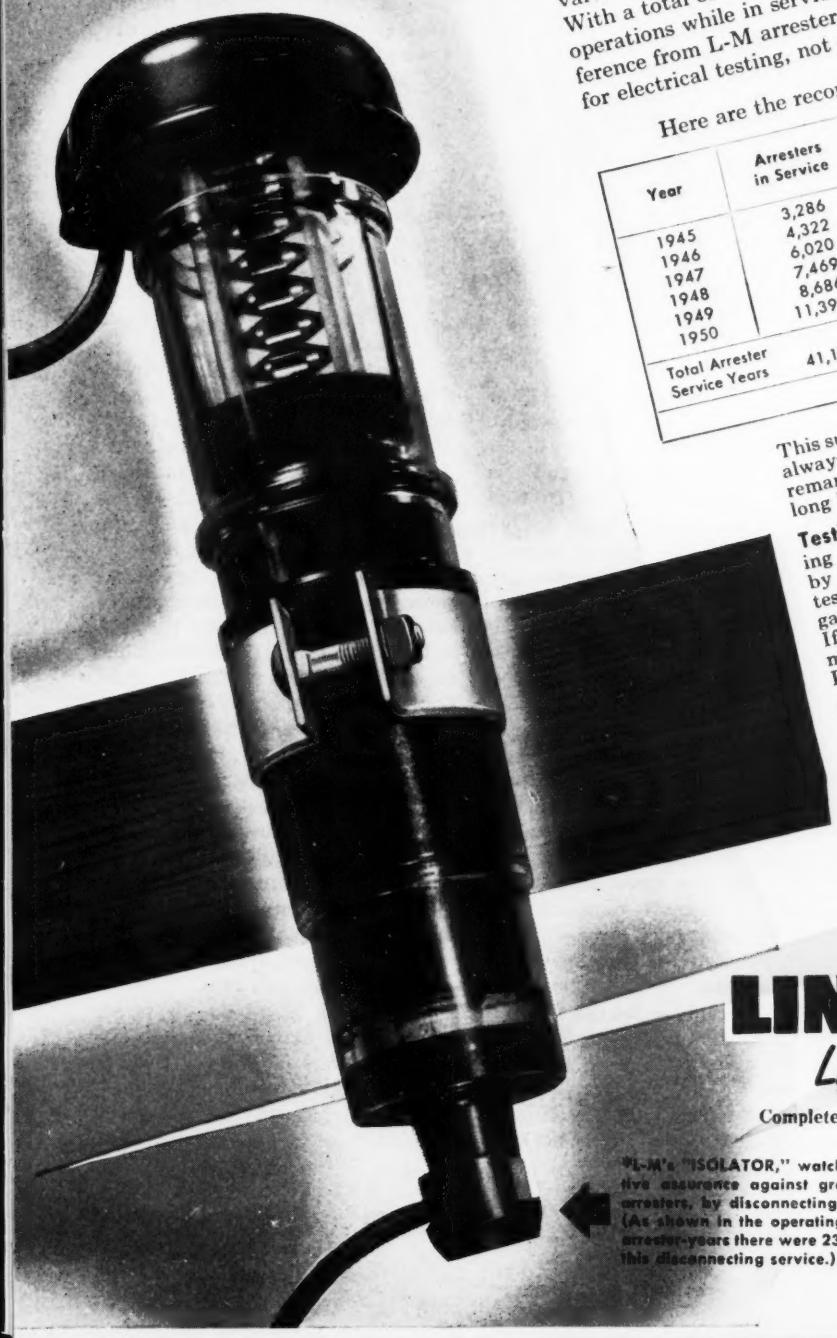
Year	Arresters in Service	Isolator Operations in Service	Number Tested	Failed in Test
1945	3,286	5	0	0
1946	4,322	2	11	0
1947	6,020	2	137	0
1948	7,469	4	118	0
1949	8,686	3	186	0
1950	11,392	7	161	0
Total Arrester Service Years	41,175	23	613	0

23 ÷ 41,175 = .056% failure rate

This substantiates the claims that L-M engineers have always been able to make—that L-M arresters give remarkable protection, excellent performance, and long life with unchanging characteristics.

Testing Greatly Simplified. The Pyrex® glass housing of L-M valve type arresters allows you to "test by sight." You don't have to make an electrical test of every single arrester. Just look at the spark gap—any irregularities can be detected by sight. If the Isolator* is intact you know the valve element is okay. That's all there is to it—if you use L-M Pyrex-housed valve type lightning arresters.

Get Complete Details. For complete information on L-M Lightning Arresters, and details of visual test methods, ask the L-M Field Engineer, or write Line Material Co., Milwaukee 1, Wis. (a McGraw Electric Company Division).



LM

LINE MATERIAL

Lightning Arresters

Complete Coordinated Equipment for Distribution Today

*L-M's "ISOLATOR," watchdog of arrester trouble, gives positive assurance against grounding feeders through damaged arresters, by disconnecting the ground lead from the arrester. (As shown in the operating company records above, in 41,175 arrester-years there were 23 Isolator operations, which provided this disconnecting service.)

80

T-H Exemption for Utilities . . .

. . . proposed by Sen H. Alexander Smith. Labor law change would give states jurisdiction over local electric firms

Removing "local" public utilities and the building and construction industry from all provisions of the Taft-Hartley law was proposed in a bill introduced in the Senate by Sen H. Alexander Smith, Republican, N. J., chairman of the Senate Labor Committee recently. It has the backing of Sen Robert A. Taft of Ohio.

The amendment to the act would do the following:

- Exempt all "local" public utilities from the act and leave to the individual states the question of regulating their labor-management relations;
- Exempt the building and construction industry;
- Exempt any business employing fewer than ten workers whether their activities are interstate in character or not;
- Forbid National Labor Relations Board from giving the states jurisdiction over any labor dispute that fell within the provisions of the amended T-H law;
- Exclude from the federal law all employers whose interstate commerce business does not exceed specified amounts, writing into the law criteria that are now part of NLRB regulations.

Definition of a Utility . . . The word "utilities" would cover companies providing electric, gas, heat, water, sanitation, public passenger transportation or communications, as well as gas pipe line companies. These would be exempted from the T-H law only if 75% of their annual dollar volume of goods or services is provided within the state in which the company is located.

Senator Smith declared that utilities were "primarily local in character." They are being regulated locally and should be "left in the control of the state" when it comes to labor disputes, he said.

Senator Taft said the problem of removing "local" utilities and construction employers from the provisions of the T-H Act was a definition of interstate commerce. "I can't see what a street car railway in Milwaukee has to do with interstate commerce," he pointed out.

CIO Protests . . . Arthur J. Goldberg, general counsel of the Congress of Industrial Organizations, said Smith's amendment did not "meet the standards of fairness and justice in our labor relations law repeatedly promised by President Eisenhower." United Mine Workers' John L. Lewis has already said he disagrees strongly with the Smith amendment.

In a statement prepared for the House Labor Committee and signed by State Attorneys General Vernon W. Thompson of Wisconsin, chairman; Frank G. Millard of Michigan, and J. Lindsay Almond, Jr, of Virginia, the National Association of Attorneys General urged Congress to "reaffirm" authority of states to deal with law enforcement problems involved in labor disputes.

Utilities Give Support . . . F. L. Larkin, vice president of Wisconsin Electric Power Co; Clifford B. Boulet, personnel director of Wisconsin Public Service Corp; and Grover C. Neff, president of Wisconsin Power & Light Co, supported the attorneys general's position on labor disputes in the utility industry.

If this bill is passed it would enhance the effect of laws in some 20 states which restrict labor activities of one sort or another. And it is anticipated that more states without labor laws would enact them if the federal government pulled in its horns and left the states with more to do.

Twelve states and Hawaii have laws restricting or outlawing strikes in public utilities. The states are Florida, Indiana, Kansas, Massachusetts, Michigan, Mississippi, Nebraska, New Jersey, Pennsylvania, Texas, Virginia, and Wisconsin.

Right now these laws have little effect because of a Supreme Court decision in a Wisconsin case. The highest court held the Wisconsin law requiring arbitration of utility disputes to be invalid because of conflict with Taft-Hartley.

Iowa University to Hold Management Course

The College of Engineering, State University of Iowa, has announced the 14th Summer Management Course to be held June 15-27 in Iowa City.

Since its inception, over 1,000 representatives of American and foreign business, industrial and governmental organizations have increased their understanding of the design and application of the major management techniques.

Communications concerning the course should be sent to Wayne Deegan, 113 Engineering Building, State University of Iowa, Iowa City, Iowa.

B.C. Engineer Questions Limit on Job Activities

Question of whether professional engineers must limit their work to the branch of engineering in which they are trained and registered is being considered by the British Columbia Court of Appeal.

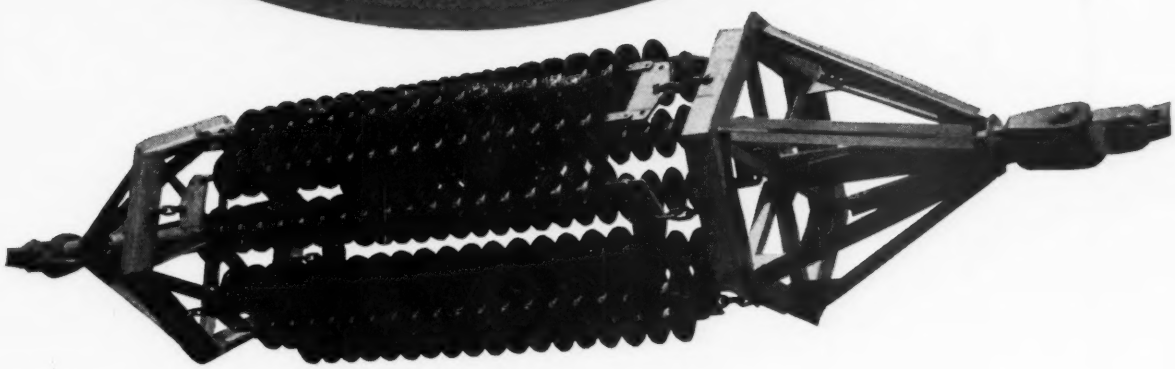
The case is an appeal by Arthur Lionel, at Victoria, B. C., a registered chemical engineer, against a judgment by Justice A. D. MacFarlane of the B. C. Supreme Court, in which Lionel's claim for payment of fees from Architect F. W. Nicolls was thrown out on the grounds the engineer practiced in fields of engineering other than that for which he had been certified.

Lionel claimed $1,911 owing him for two jobs he did for Nicolls in 1950. One job was in the field of structural engineering, drawing plans for a concrete arena in Victoria, and the other was in the field of electrical engineering, laying out an electrical system for a bowling alley and stores to be built in connection with a hotel project.

Justice MacFarlane ruled Lionel was not entitled to professional fees for these two jobs since he was registered as a chemical engineer and that he was operating outside this field.

Until the judgment was delivered, it was common practice for professional engineers in British Columbia to accept work in any branch of engineering for which they felt themselves qualified, regardless of how they were certified.

"O-B" is CHOICE of INSULATORS

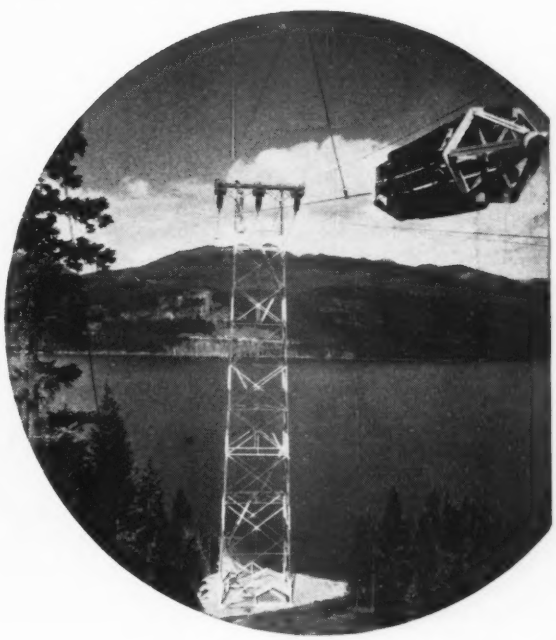


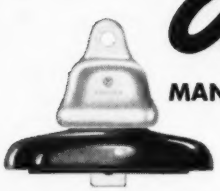
on World's Largest Span

Now, the longest unsupported conductor span in the world -- over two miles -- is carried on O-B suspension insulators. Twelve strings of 18 units each, yoked in a lever-acting, load-dividing assembly, apply a generous safety factor to a computed ultimate strain of 228,000 pounds.

Need we "gild the lily" by pointing to the necessity for dependability in such an application as this? Where nothing counted so much as reliable service, builders of this span put O-B insulators on the job.

Your lines may not impose such spectacular demands on insulation, but whether the need for extra performance is deliberately designed into the job, or may just accidently come along, it is best handled by making O-B YOUR CHOICE OF INSULATORS.

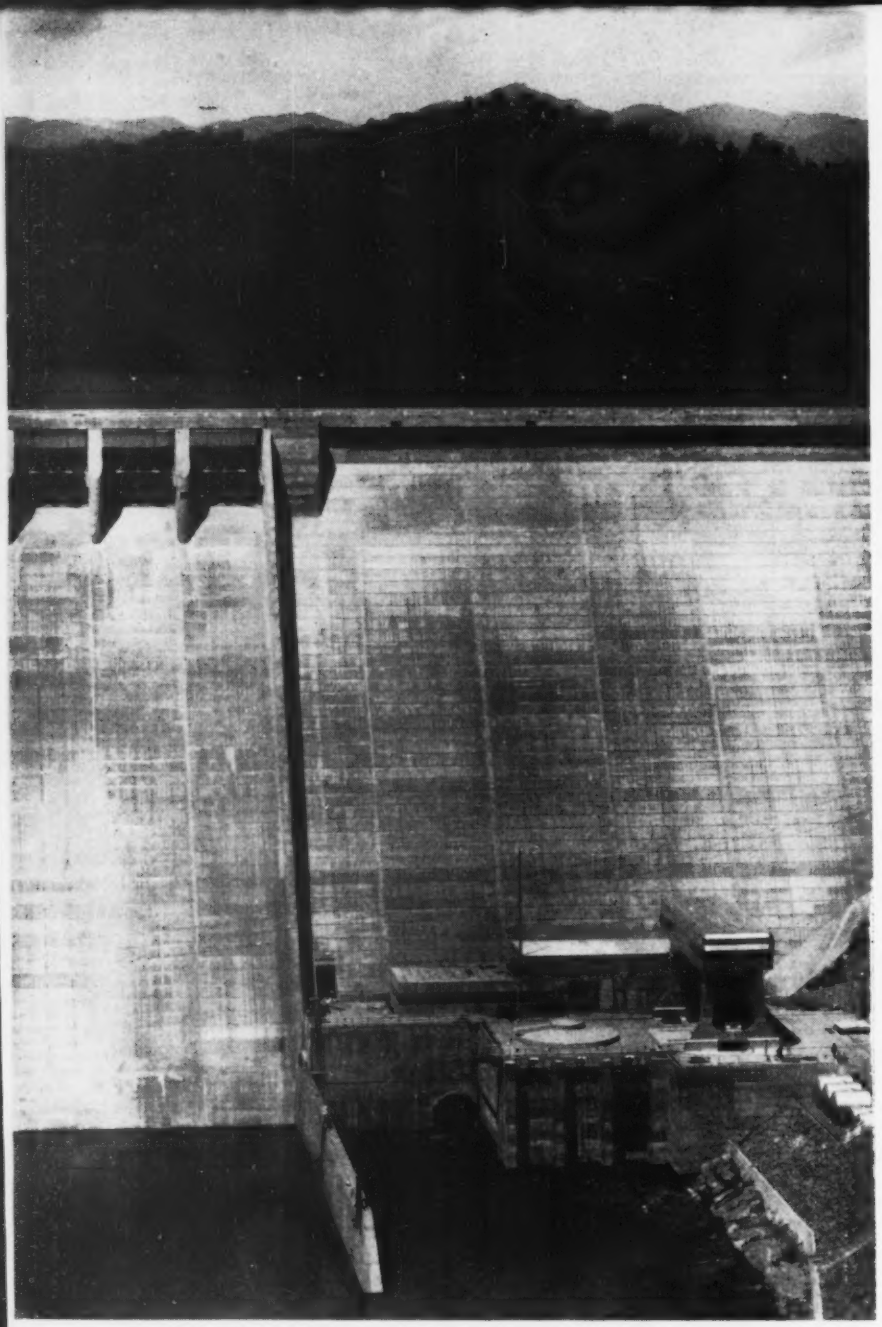




Ohio Brass

MANSFIELD OHIO, U.S.A.

4393-H



VACANT STALL, left, in Hiwassee Dam proved suitable for the installation of a pump-turbine unit. First unit, which was installed in the right stall in 1940, has capacity of 57,600 kw

Pump-Turbine Unit at Hiwassee Aids TVA

Last vacant stall in system is being filled with a 58,000-kw generator and a turbine which will pump back 1.75 million gpm of water into the reservoir in off-peak periods for use at peaks

HARRY WIERSEMA, Asst to the Chief Engineer, Tennessee Valley Authority

Once upon a time Tennessee Valley Authority had 32 vacant stalls in its 18 dams. Now the last of these, one at Hiwassee Dam on the Hiwassee River in North Carolina, is being filled. To squeeze the last drop of available energy from this installation TVA is filling the stall with a reversible dual purpose pump-turbine unit.

There is nothing new or mysterious about the pump turbine. There are many such installations in Europe and a few in the United States. Abroad the usual type of installation consists of a combination motor and generator in a single unit attached to a shaft having two runners, one of which operates as a turbine and the other as a pump. It is necessary to have separate waterways for the two runners, the flow going through one when operating the turbine in one direction and through the other when operating as a pump in the opposite direction.

Cheap Power Gets You Costly Power . . . The Hiwassee installation will be a true reversible unit. It will have a combined motor and generator and a combined pump and turbine wheel. So it will require but one waterway.

All pump turbine installations operate on the principle that it is both efficient and profitable to use low-cost, off-peak power to pump water into a reservoir from which it can be drawn to furnish high-cost, peak power. At Hiwassee when operating as a turbine and generator, the unit will add 58,000 kw of capacity to the TVA system; when operated as a motor and pump, it will lift 1.75 million gpm against a head of 205 ft.

Four Dams on the Tributary . . . Hiwassee is one of TVA's older projects. It dates back to 1940. The initial installation consisted of a conventional generating unit rated at 57,600 kw at 190-ft head. Later three other dams were built on the same tributary system, the Chatuge and Nottely Dams upstream to furnish storage for regulating flows and the Apalachia Dam immediately downstream to utilize upstream storage through a head of an additional 345 ft.

The one unit in operation at Hiwassee has sufficient capacity to utilize all available flow for most of the year. Therefore installation of a second unit, for which a stall had been

provided, would add little energy to the system. TVA system has been changing in recent years. A number of steam stations have been built, and these will be base load stations. Hydro stations will be used more and more for peaking. The importance of tributary hydro plants has shifted from operation for energy to operation for maximum capacity. This shift has made a second Hiwassee unit attractive.

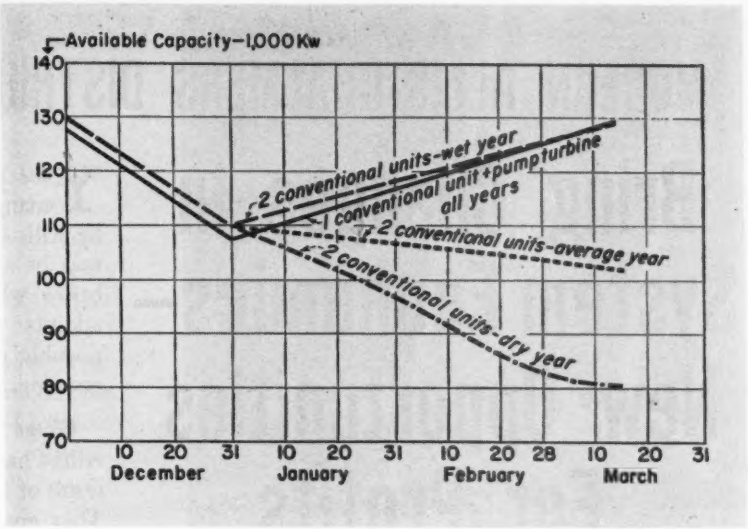
Greater Efficiency, More Peak Power . . . Studies showed that the construction of the Apalachia Dam downstream had created a storage pool from which water could be pumped to the Hiwassee Reservoir. This was a definite call for a pump-turbine unit. By its use the reservoir levels would be kept higher not only during the critical months of the year but also during the regular draw-down season in late summer and fall. The resulting higher heads would increase the efficiency of both units and thereby increase both the capacity for peaking and also the energy output.

Another advantage of the pump-turbine unit lies in the fact that the fluctuations resulting from its use with a conventional unit are less than those from the use of two conventional units. This results in increased output from the downstream Apalachia units.

Empty Stall Was Adaptable . . . Fortunately the empty stall at Hiwassee was suitable for a pump-turbine unit without any difficult adaptations being required. Furthermore the operating characteristics of the reversible unit when used to generate power are not too inefficient as compared with a conventional unit. When operating as a turbine it is rated at 80,000 hp at 190-ft head. Its speed will be 105.9 rpm when operating as a turbine or as a pump.

When operating as a pump it is rated at approximately 3,900 cfs against a head of 205 ft and requires an input of 100,000 hp equivalent to a motor rating of 78,250 kw at 1.0 power factor. The generator is of the umbrella type having a combined thrust and guide bearing located under the rotor. It will be rated at 64,500 kva, 58,000 kw at 0.9 power factor and 60 C rise. Operating voltage will be 13,800.

The greatest demands for power in the TVA system occur from December to the end of March, when all available hydro capacity is utilized. The greatest value of the Hiwassee pump-turbine unit will result from its operation during this load period. Full use of this and the conventional unit will be required for 50 to 60 hours a week.



Two factors determine the comparison values of the pump-turbine to the conventional unit. Of the two the additional capacity is the more important. The graph shows the results of computations as to the available capacity of the two types of installations.

From the beginning of the critical period, two conventional units would have about 2,000 kw greater capacity than one conventional unit plus a pump-turbine. But in the average year the situation would reverse within a few weeks. By March 1 the latter combination would have a 22,000 kw advantage. In dry years the advantage would be double.

For the purpose of economic analysis a figure of 8,500 kw was used as representing the probable increment available over a period of years. However, the increased capacity of the pump-turbine unit in a dry year when capacity is at its maximum premium is a very important factor.

When one considers energy, the advantage of the pump-turbine unit is also apparent. It will be seen from the table that the addition of the conventional unit would greatly reduce energy available during the non-critical portion of the year. This would result from the draw-down of the reservoir during the critical period. With a pump-turbine draw-down would not be so severe.

A second conventional unit would add 3 million kwhr to the system annually; a pump-turbine would add 29 million kwhr. As only 34 million kwhr of off-peak energy will be needed on the average to run the reversible unit as a pump, the advantage in favor of the pump-turbine each year will be considerable.

Offsetting in part the operating advantages are the higher cost of the pump-turbine unit and its higher installation cost. Yet the economic balance is such as to justify the selection of the pump-turbine unit.

Item	Conventional Unit Increment (Kilowatt-Hours)	Pump-Turbine Unit Increment (Kilowatt-Hours)	Balance in Favor of Pump-Turbine (Kilowatt-Hours)
Nov. to April peak	34,000,000	49,000,000	15,000,000
Nov. to April off-peak	9,000,000	−21,000,000	−30,000,000
Remainder of year (unclassified)	−40,000,000	1,000,000	41,000,000
Total	3,000,000	29,000,000	26,000,000

NOTES:
Available capacity is based on there being sufficient head available to permit full generator output at start of high load period; reservoir at maximum multiple-purpose level on January 1; reservoir drawdown after January 1 only when required to supply peak station output 50 hours each week.

MODERN ALLIS-CHALMERS DISTRIBUTION REGULATORS

Bring Changes in System Economics— New Opportunities For Profits

YOU MAY BE ABLE TO PROFIT from the changes in system economics brought about by Allis-Chalmers distribution regulators. You may be able to reduce regulation expenses far below what present regulation is costing. In addition, this low-cost, reliable unit now makes possible regulation at points where it was not economical before.

Gives You Highest Quality Regulation

Allis-Chalmers distribution regulators are the result of twenty years of ⅝% step development. They give you *all* the advantages of ⅝% step regulation: a narrow ± 1 volt band, 20% range

Feather-Touch Control

. . . is standard equipment on all Allis-Chalmers ⅝% step regulators. The only setting you make is voltage level, which is calibrated for easy adjustment. Voltage band is preset at factory.

Unit-Type Construction

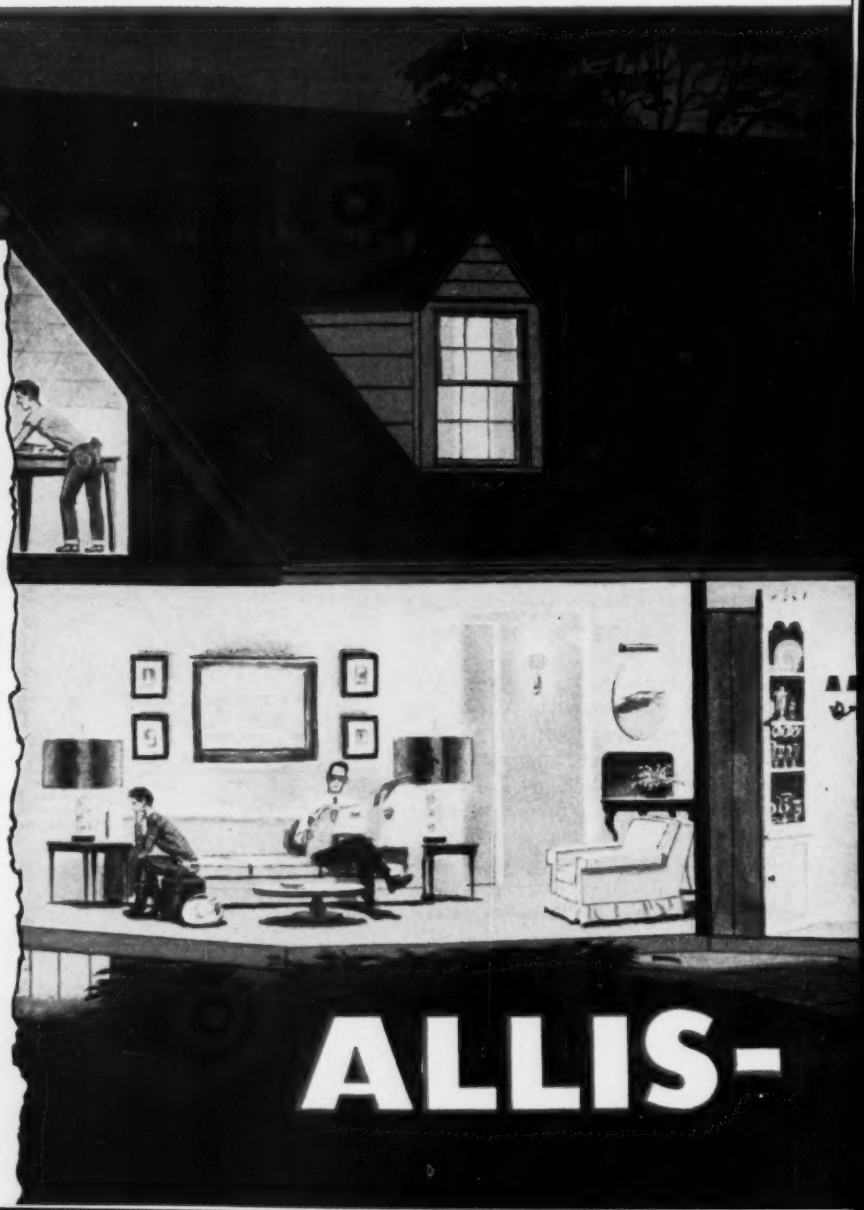
. . . assures high quality workmanship. All connections are made before tanking. Thorough inspection is guaranteed because connections are easily accessible. Same feature makes future maintenance simple.

Long-Life Contacts

. . . will withstand enough operations to equal 40 years of normal service life. Arc-resisting material, large dimensions, and strong spring pressure combine to assure you freedom from contact troubles.

Five Million Operations

. . . are what you can expect from the tap-changing mechanism of an Allis-Chalmers distribution regulator. Mechanisms are designed for simplicity, built for rugged operation.



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of regulation, and a broad line of regulators to meet nearly every voltage need.

Increase Profits

You can increase profits as well as improve service to consumers with Allis-Chalmers distribution regulators. In most instances, these units pay for themselves in less than two years—give you clear profit for the many years of service after that.

For complete information — including cost comparison showing how you can reduce cost of regulation—call your nearby Allis-Chalmers district office or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-4045

CEI Fills Top Level Posts

Ober and Besse named senior and executive vice president, respectively. Five veteran employees become VPs

DEAN C. OBER

Cleveland Electric Illuminating Co has made revisions in its top management structure.

Dean C. Ober, executive vice president of the company for the past eight years, has been elected to the newly created position of senior vice president. Ralph M. Besse, vice president since 1948, succeeds Ober as executive vice president.

New Vice Presidents . . . CEI has elected five veteran members of its executive staff to the post of vice president. They are Clarence J. Beller, F. Warren Brooks, Albert A. Casey, Robert C. Hienton, and Harry T. Sealy.

Ober plans to retire in October of this year after about 40 years of service. Ober, who joined CEI in 1912, was named executive engineer of the company in 1933, vice president in 1944, and executive vice president in 1945.

Besse handled CEI legal affairs for a number of years as a partner in the Cleveland law firm of Squire, Sanders & Dempsey before joining the company as vice president in 1948.

Beller, manager of electrical operations since 1945, was elected vice president in charge of electrical operation and engineering. He has been with the company for 28 years.

RALPH M. BESSE | CLARENCE J. BELLER | F. WARREN BROOKS

ALBERT A. CASEY | ROBERT C. HIENTON | HARRY T. SEALY

Brooks, newly elected vice president in charge of finance, has served CEI as director of business research and valuation for the past two years. He joined CEI as a test engineer in 1927.

Casey, since 1943 manager of power production, was elected vice president in charge of power production and engineering. He was employed by the company in 1920. Hienton, who joined CEI's sales staff in 1927, was named vice president in charge of marketing. For the past four years he has been manager of marketing.

Sealy, newly elected vice president in charge of distribution, has served as manager of distribution since last October. Sealy started with CEI in 1938 as an administrative assistant.

Executive Staff Appointees . . . CEI has also appointed five new members to its executive staff. The new appointees are: Edwin C. Cawrse, general superintendent of steam power; Harold E. Cody, general superintendent of lines; Clarence A. Dauber, director of civil and mechanical engineering; Charles E. Ganther, general superintendent of the electrical department; and Arthur C. Gohlke, director of electrical engineering.

Heads Maryland Group

New president of the Maryland Utilities Association is E. Cleveland Giddings, vice president of Capital Transit Co, Washington D. C. Other officers elected were J. Frank Blake, Jr, general manager, Conowingo Power Co, vice president; Austin E. Penn, vice president, Consolidated Gas, Electric Light & Power Co of Baltimore, treasurer; and Robert L. Smith, district manager, Potomac Edison Co, secretary.

Ryan Appointed President

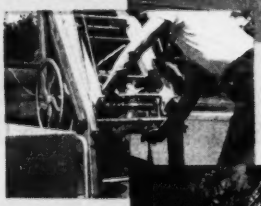
J. T. Ryan, Jr, has been elected president of Mine Safety Appliances Co, Pittsburgh, safety equipment manufacturing firm. Ryan, who has been executive vice president of the company since 1948, succeeds George H. Deike, Sr, who was named chairman of the board. Deike has served as president of the firm since it was founded nearly 39 years ago.

THIRTY FEET HIGH in THIRTY SECONDS

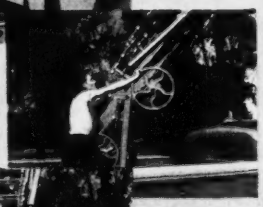
Simple, Easy, One-Man Operation

1. Ladder hold-down on cab roof is released.

2. Pressure is applied to lower ladder rung.

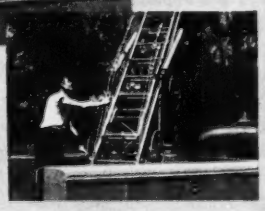


3. Ladder is locked in elevated position.



4. Upper section is extended to desired height.

5. Ladder is rotated to spotting position.



6. Incline of ladder is adjusted as required.

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REVOLVING AERIAL LADDER

Sounds unbelievable . . . but the *Powers-American* Aerial Ladder is so simple, so fast, and so easy to operate that it can be raised to a working position in only 30 seconds—by *one man!* This versatile ladder can be spotted in 40 positions throughout a 360° revolution . . . inclined to any angle from 30 to 75 degrees. Its curved platform falls into position automatically—to provide a level working surface. What's more, this ladder is so safe that it will support *five* times the normal working load. If your operation calls for overhead work, get all the facts on *Powers-American* Aerial Ladders. Mail the coupon NOW for complete information.

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- ☐ General Service Bodies
- ☐ Light Duty Maintenance Bodies
- ☐ Wire Reels
- ☐ Pole Trailers
- ☐ Hydraulic Towers
- ☐ _____
- ☐ _____
- ☐ _____

Name_____

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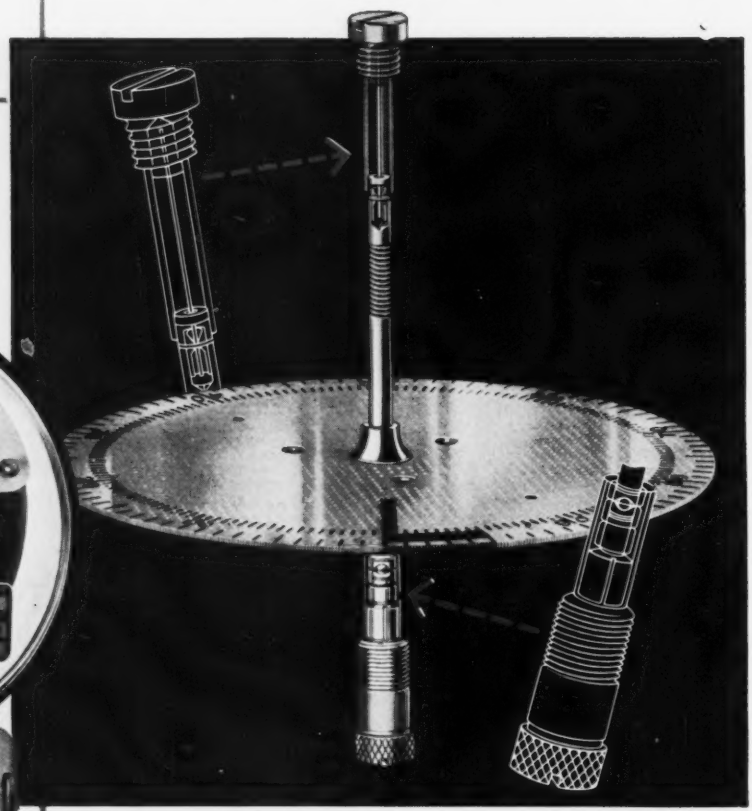
a full measure of service

Sangamo J Meters



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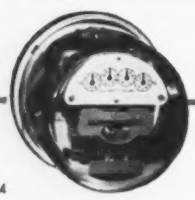
SPRINGFIELD, ILLINOIS

Utilities have a right to expect good service from the watthour meters they buy.

Sangamo Type J Meters give a full measure of service . . . Thirteen years of performance have proved Type J's remarkably free from bearing wear. The cobalt tungsten ball and sapphire jewels of the lower bearing, and the stainless steel pivot and bronze bushing of the upper bearing are practically unaffected by millions of revolutions.

High insulation level and surge resistant damping magnets prevent damage from lightning surges . . . High thermal rating means fewer meters burned up on severe overloads . . . Rigid mechanical construction prevents change of accuracy even under extreme vibration or temperature changes.

These are the major items that contribute to a full measure of service. You can keep operating expenses at a minimum with the *proven* J Meter.



Only Measured Facts are Known Facts

JM53-4

Newly appointed officials of Central Illinois Electric & Gas Co from left to right are James E. Murray, president; Leroy W. Esten, treasurer; Donald C. McClure, who was advanced from post of president to chairman of the board; and Hubert E. Braunig, executive vice president

Murray Named President . . .

. . . of Central Illinois Electric & Gas Co to succeed Donald C McClure, new board chairman. Braunig and Esten elevated

James E. Murray, vice president and treasurer of Central Illinois Electric & Gas Co, has been appointed president to succeed Donald C. McClure, who has been named chairman of the board.

Hubert E. Braunig, who has been vice president in charge of operations, has been designated as executive vice president. Leroy W. Esten, who has been director of personnel and customer relations, is the utility's new treasurer.

To Handle Investment Work . . . McClure, who is not retiring, will devote more time to the investment phase of the company while Murray will handle the management. Braunig, as executive vice president, will be the No. 2 official in management of the utility. He will continue his duties in charge of operations.

Esten will assume the present duties of Murray as treasurer. He will continue to be in charge of employee relations.

Responsibility for advertising, publicity, customer survey and related activities will be taken over by F. L. Fletcher as part of his duties as sales manager.

McClure and Murray came to Central Illinois E&G as president and treasurer, respectively, at about the same time in 1933. Braunig has been with the utility for 12 years and Esten's service record with the Illinois company dates back to 1933 when he started as budget director and auditor.

•

W. Allen Brecht has been named consulting engineer for Westinghouse Electric Corp's Atomic Power Division. Brecht, who joined Westinghouse in 1922, comes to his new position after serving for the past year as consulting engineer to the vice president in charge of the company's East Pittsburgh plant.

Donald A. Davenport has been named chief engineer of Associated Research, Inc, Chicago.

Sylvania Elects Zimmer President, Harrison VP

H. Ward Zimmer, executive vice president of Sylvania Electric Products, Inc, has been elected president to succeed Don G. Mitchell, who has been named chairman of the board.

Mitchell, president of Sylvania since May, 1946, replaces as chairman, Max F. Balcom, who is retiring after serving the Sylvania organization and predecessor companies for 35 years. Balcom, who will continue as a director, served as a vice president and treasurer before assuming the chairmanship in 1950.

W. Benton Harrison, treasurer of the company for the past two years, has been elected vice president in charge of finance.

Zimmer joined the Pennsylvania predecessor company of Sylvania in 1919. After filling high divisional posts, he became vice president in charge of operations in 1947 and executive vice president in 1950. Mitchell began with Sylvania in 1942 as vice president in charge of sales, becoming executive vice president in January, 1946.

H. WARD ZIMMER

OBITUARY

Carl P. Zimmerer, 63, treasurer of Ebasco Services, Inc, died April 23 at Flushing, N. Y. When Ebasco Services was organized in 1935, he became general auditor and since 1945 has served as treasurer. He began his career with Electric Bond & Share in 1915 as traveling auditor.

FINANCIAL

Financial Public Relations . . .

. . . should be developed and expanded by utilities to take care of capital to be raised for expansion, Walter Merkel declares

Utilities should develop not only good public relations, but also progressive and adequate financial public relations, Walter F. Merkel, vice president of Gartley & Associates, Inc, told the Maryland Public Utilities Association recently.

This is necessary, he said, to take care of the billions of dollars which must be raised by the industry in the security markets for future expansion. Accumulated earnings can supply only a small part of this, he declared.

Expand Investor Relations . . . To raise this money, he suggested, that "sound investor relations should be further expanded now. They will pay off in easier marketing, in more favorable terms for your company and in a more accurate appraisal of your company's shares in the nation's security marts."

This can be done, he pointed out, by getting security analysts interested in the company. He stated that many security analysts, in order to measure the greater attractiveness of one utility as compared with another, would like to know:

1. What is the scope of the company's activities? Is it an energy supplier? If so, does it supply both electric and gas energy or does it provide only one?

2. What territory does the company serve—present size and potential? What is it doing to help the area it serves reach its ultimate potential?

3. What is the regulatory atmosphere?

4. What are the details of the property account?

5. What is the long range financing program? How about new equity capital?

6. When it comes to earnings, what is the relationship between present earnings and capital investments. What about future growth?

7. On dividends, the analysts are concerned with safety, consistency, and higher dividends.

8. Is the company progressive in its employee relations?

9. How about the management? Has it ability? Is it obtaining the greatest amount of earnings possible under the restrictive influence of regulation? If not, is every effort being made to realize the greatest potential earnings? Is it aggressive in its public relations and advertising? Is it using the latest and most efficient equipment? Does the construction program provide sufficient capacity? Is it constantly alert to the need of enlisting public support, through educational programs, in seeking rate increases?

These are some of the questions, Merkel pointed out, the security analysts want answered before they can properly appraise the value of the company's securities.

The institutional investor is interested in substantially the same information as above, though "he does want the specific operations broken down more completely," he declared. Also, he said, this type of investor would like to have informal conferences from time to time with top management.

Seven Points Involved . . . A successful financial or investor relations program, he said, should do the following:

- Inspire interest among potential investors,
- Bring about a fairer appraisal of the company's securities,
- Enable the company to obtain additional capital more easily and at less cost,
- Maintain loyalty and confidence of present shareholders,
- Help management in its relations with regulatory bodies,
- Improve company's earnings by attracting new industries and residents to the territory, and
- Facilitate obtaining shareholder approval for company proposals.

These results, he declared, can be achieved by:

1. Careful selection and preparation of material,

2. Continual development of new ideas,

3. A constancy of effort,

4. Expert channeling of information to the necessary audiences, and

5. By knowing the needs of these audiences and making it easy for them.

Idaho Power to Pay City 2% Gross Revenue Tax

City Council of Ontario, Ore., passed a franchise tax ordinance recently, forcing Idaho Power Co into a new tax-collecting role.

The measure, placing a 2% tax on the company's gross revenues in the city, is the first municipal franchise levy on the company in the two-state area it serves.

The tax becomes effective with ten-year renewal of the company's franchise in June. It is expected to give the municipality about $6,500 annually. The utility is already one of the area's largest tax-gatherers, paying out $6,101,882 in federal, state and local taxes from 1952 revenues of $19,132,423.

Rate Study Is Rejected by Oregon House Unit

Oregon's legislature has turned its back on a proposal for a two-year interim session committee study of electric rates and policies of the state's private utility companies.

In tabling by a vote of 5 to 4 the resolution of Rep Monroe Sweetland of Milwaukee, the House Committee on Commerce and Utilities snuffed out any chance for private utility foes to make political capital from the furor over steam-cost surcharges resulting from last winter's hydro shortage. Sweetland's resolution would have created a 15-member committee to "study and gather facts concerning the rate-making policies and methods of privately owned public utilities."

Testimony by Gus Norwood, executive secretary of the Northwest Public Power Association which represents PUD's co-ops and municipal systems of the state, gave the House committee some inkling of the direction any such investigation or study

would have included. Norwood detailed a nine-point indictment critical of the private companies and said these topics should be covered in any study.

Sweetland's bill requiring PUC hearings within 30 days of any emergency surcharge on electric billings, and calling for separate accounting of such surcharges for the customers' information, has passed the House and is in the Senate.

FINANCIAL BRIEFS

Blyth & Co has contracted to buy 448,712 common shares (about 61% of total outstanding) of Pacific Public Service Co from Standard Oil Co of California at $21 a share. Blyth is planning to buy for a limited time shares held by other stockholders of PPS at $21. Charles R. Blyth said he hopes to negotiate, within a year, a consolidation of PPS with Pacific Gas & Electric Co.

Pennsylvania Power & Light Co has filed with Securities and Exchange Commission a registration statement for issuance of 39,936 shares of preferred stock, 75,000 shares of series preferred and 743,496 common shares to be exchanged for outstanding stock of Scranton Electric Co.

Northern States Power Co has announced it is buying certain electric facilities from Twin City Rapid Transit Co for $1.5 million . . . **Dover, Ohio,** City Council has sold $1,015,000 municipal electric plant 20-year bond issue at 3.131% interest to First Cleveland Corp.

Dividend Increases: Colorado Central Power Co will pay June 1 to stockholders of record May 15 a 28¢ a share quarterly common dividend as compared with 25¢ paid previously . . . American Gas & Electric Co will pay June 10 to stock of record May 11 a 41¢ a share quarterly common dividend as compared with 37½¢ a share previously.

Eastern New York Power Corp has received Securities and Exchange Commission approval to sell its "leased properties" to Dartmouth College for $9,790,000 . . . **Public Service of Colorado** has sold 65,000 shares 4½% $100 par preferred to institutions.

Today in Utility Finance

YIELDS (%)

Quality	Bonds 1st	Bonds 2nd	Bonds 3rd	Preferred Stocks 1st	Preferred Stocks 2nd	Preferred Stocks 3rd	Common Stocks 1st	Common Stocks 2nd	Common Stocks 3rd
DATE									
1953									
April 30	**3.34**	**3.44**	**3.62**	**4.32**	**4.51**	**4.76**	**5.14**	**5.60**	**5.77**
April 23	3.30	3.38	3.54	4.31	4.54	4.76	5.11	5.55	5.75
END OF QTR.									
1st 1953	3.15	3.23	3.39	4.16	4.41	4.66	4.95	5.24	5.50
4th 1952	2.99	3.03	3.14	4.06	4.22	4.59	4.98	5.33	5.62
3rd 1952	2.99	3.03	3.16	4.10	4.26	4.61	5.18	5.59	5.96
2nd 1952	2.95	3.00	3.09	4.05	4.31	4.60	5.38	5.85	6.42

Data: Reis & Chandler, Inc.

EARNINGS

Company	Period Months Ended		Net Income 1953	Net Income 1952	Earnings Per Common Share 1953	Earnings Per Common Share 1952
Arizona Public Service	12	Mar.	$3,448,000	$2,470,000	$....	$....
Carolina Power & Light	12	Mar.	7,124,236	6,482,163	....	....
Central Power & Light	12	Mar.	4,730,264	4,370,719	....	....
Consolidated Gas EL&P of Baltimore	12	Mar.	10,783,739	9,127,315	1.94(a)	1.63(a)
Gulf States Utilities	12	Mar.	7,471,123	6,088,332	1.92(b)	1.66(b)
Niagara Mohawk Power	12	Mar.	23,553,754	22,555,887	1.191(c)	2.00(c)
Northern Indiana Public Service	12	Mar.	8,732,957	7,967,053	2.37(e)	2.24(e)
Oklahoma Gas & Electric	12	Mar.	5,859,361	5,171,624	2.06	1.78
Portland General Electric	12	Mar.	3,680,469	3,494,768	2.45(f)	2.80(f)
Potomac Electric Power	12	Mar.	6,194,424	5,705,848	1.36	1.24
Public Service of Indiana	12	Mar.	10,478,146	8,727,887	2.46(g)	2.23(g)
Shawinigan Water & Power	3	Mar.	1,475,561	1,332,033	....	....
Southern California Edison	12	Mar.	23,796,016	20,234,289	2.89	3.03
Southern Canada Power	12	Mar.	712,031	556,682	....	....
Southwestern Gas & Electric	12	Mar.	3,877,036	3,429,671	....	....
Tampa Electric	12	Mar.	2,407,544	1,812,104	3.39(h)	3.03(h)
Texas Electric Service	12	Mar.	8,372,909	7,128,852	....	....
Tucson Gas, EL&P	12	Mar.	1,426,465	992,525	2.65(i)	2.55(i)

Notes—(a) Based on 4,945,266 shares in 1953 and 4,853,034 shares in 1952; (b) Based on 3,124,168 shares in 1953 and 2,884,590 shares in 1952; (c) Based on 10,837,440 shares in 1953 and 9,837,440 shares in 1952; (e) Based on 3,117,794 shares in 1953 and 3,045,661 shares in 1952; (f) Based on 1,500,000 shares in 1953 and 1,250,000 shares in 1952; (g) Based on 3,780,768 shares in 1953 and 3,578,655 shares in 1952; (h) Based on 658,441 shares in 1953 and 598,441 shares in 1952; and (i) Based on 500,000 shares in 1953 and 360,000 shares in 1952.

FINANCING

Company and Description	Amount of Offering ($000)	Offering Price	Yield to Public
WEEK OF APRIL 30—MAY 6			
Bonds			
Wisconsin Public Service—1st mtg 4⅛% due 1983	$8,000	102.172%	4.00%
Debentures			
Montana Power—debentures 4⅜% due 1978	$18,000	101.913%	4.25%
Preferred Stock			
California Pacific Utilities—50,000 sh 5.40% $20 par conv	$1,000	$20.00	5.40%
Long Island Lighting—100,000 sh 5.25% $100 par	10,000	100.00	5.25
Common Stock			
Montana-Dakota Utilities—293,108 sh (being offered common-holders on 1-for-5 basis, record May 5 to expire May 20)	$6,412	$21.875	4.11%
SCHEDULE FOR MAY—JUNE			
Bonds			**Bid Date**
New Orleans Public Service—1st mtg due 1983	$6,000	.....	May 11
Central Power & Light—1st mtg due 1983	8,000	.....	May 11
Alabama Power—1st mtg due 1983	18,000	.....	May 12
Texas Power & Light—1st mtg due 1983	5,000	.....	May 18
Metropolitan Edison—1st mtg due 1983	8,000	.....	May 19
Pacific Gas & Electric—1st mtg due 1984	65,000	.....	May 19
Metropolitan Edison—1st mtg	8,000	.....	May 19
Philadelphia Electric—1st mtg due 1983	30,000	.....	May 20
Arkansas Power & Light—1st mtg	18,000	.....	June 8
Gulf Power—1st mtg due 1983	7,000	.....	June 9
Pennsylvania Electric—1st mtg due 1983	12,500	.....	June 23
Potomac Electric Power—1st mtg due 1988	10,000	.....	.....
Iowa Public Service—1st mtg	7,500	.....	.....
Public Service Electric & Gas—1st mtg due 1983	50,000	.....	.....
Preferred Stock			
Philadelphia Electric—150,000 sh $100 par	$15,000	.....	May 13
Texas Power & Light—70,000 sh no par	7,000	.....	May 18
Public Service Co of Indiana—600,000 sh $25 par	15,000	.....	.....
Common Stock			
Potomac Electric Power—852,840 sh (to be offered common-holders on 1-for-5 basis, record about May 27)	.....	.....	.....
Texas Utilities—350,000 sh	.....	.....	June 2
American Gas & Electric—800,000 sh	.....	.....	June 9
New England Electric System—828,516 sh (to be offered common-holders on 1-for-10 basis, record June 11 to expire June 25)	.....	.....	
General Public Utilities—568,665 sh (to be offered common holders on 1-for-15 basis, record June 2)	.....	.....	.....
Public Service of Indiana—472,000 sh (to be offered common-holders on 1-for-8 basis)	.....	.....	.....

Price Favors Low Tariffs . . .

. . . on a selective basis. He tells Naval Engineers elimination of duties protecting defense industries would hurt economy

Removal of tariffs now protecting defense industries would jeopardize the economic health of this nation and weaken its defenses, President Gwilym A. Price, Westinghouse Electric Corp, told the Society of Naval Engineers at its annual banquet held May 1 at the Hotel Statler, Washington, D. C.

The Westinghouse official made it clear that he does not favor high tariffs. Instead, he favors low tariffs, but on a selective basis.

"Current proposals for complete, unilateral free trade spring from the noblest and purest of motives, but I believe they are over-simplified and wrong," Price asserted. "I believe such proposals, if carried out, could harm our economic stability, and I know they would endanger our military security . . ." he added.

Overlook Vital Industries . . . Price said that proponents of free trade implied that chiefly a few makers of certain luxury goods and food specialties would be seriously affected by elimination of import duties, but they overlook such vital defense industries as machine tools, optics, heavy electrical power equipment, and precision instruments.

"Electric power production," Price said, for example, "is vital to our national security and to implement it with foreign made equipment, with which we have had limited experience, weakens our defense."

He warned that "in the event of war, the sources of such equipment could be walled off from us completely, leaving us no where to turn for repairs, replacement parts, special tools, or engineering or maintenance services."

Not Spokesman for Industry . . . He declared that he did not presume to speak for the electrical industry, that he had consulted with no one outside of his own company.

"The electrical manufacturing industry has needed no preferential treatment and has asked none on the vast majority of its projects," Price stated, but added that the industry cannot compete with subsidized foreign companies paying far lower wage rates to manufacture the heavy power equipment vital to our defense industries.

Foreign Competition . . . Price pointed out that at least nine European companies are now competing for the limited volume of American purchases of heavy power equipment. Price also said he knew of 16 heavy power equipment projects on which both United States and foreign manufacturers entered bids in 1952 and that foreign firms were awarded six of these.

"A live and healthy power equipment industry, with both its companies and their workers consistently and profitably employed, is necessary to the national security. A foreign policy that does not recognize the long range impact of the widespread purchases of foreign made equipment on this industry, and the resultant weakening of our national defense, is not consistent with the national interest. This is just as true as to other American industries that are equally vital to American defense and are equally unable to survive foreign price competition."

Price said that federal subsidies which have been proposed by some proponents of "universalist" free trade, could not preserve vital defense industries, because "you cannot keep industry alive on such a basis, ready to produce critical goods quickly in an emergency."

British Submit Lowest Bids for Seattle Cable

Two British firms submitted the lowest bids received by the city purchasing agent at Seattle on four contracts for supplying cable to the city lighting department.

Enfield Cables, Ltd, London, figured low at $78,006 for 35,000 ft of cable, with W. T. Henley's Telegraph Works, Ltd, London, second at $78,380. Chase Brass & Copper Co, the lowest American bidder, was third at $114,-194.

The British bids are subject to sales tax, duties, and state preference percentages, but appear to be low even with such additions, said Paul R. Hendricks, city purchasing agent.

Enfield also was low on a 6,000-ft lot of cable at $3,900 and on 20,000 ft at $19,040. Henley followed at $3,914 and $19,109, respectively, with British Insulated Callender's Cables, Ltd, London, third at $3,924 and $19,159. John A. Roebling's Sons Corp was fourth on the 6,000-ft contract at $5,574, with three identical bids of $28,860 from as many American firms on the 20,000-ft lot.

On another 6,000-ft cable contract, British Insulated Callender's bid low at $1,828, followed by Roebling's at $2,555.

Chief Joseph Bid . . .

. . . specifications are revised by Army Engineers. Opening date set for May 27

Revised specifications of the Army Engineers for electrical equipment at Chief Joseph Dam make three significant changes in the requirements originally specified. They require bid bonds for both the generator and transformer contracts, reduce the former escalator percentages, and specify higher generator efficiency.

No time was wasted in getting out a second call for bids. The district engineer at Seattle April 27 invited bids on the ten power transformers and issued invitations on the four generators last week. Bids on each contract are to be opened 30 days after the invitation date.

Defense Secretary Charles E. Wilson rejected the grounds that specifications were being reviewed. The real hitch was the Buy American Act that cast doubt on award of the contracts to a foreign manufacturer. Secretary Wilson had White House support for rejecting the bids for the generators and transformers on the basis of that 1933 law.

A storm of controversy had arisen after the opening of the bids. The English Electric Export & Trading Co, Ltd, was low bidder on both contracts

When cemented to caps, top and bottom, this porcelain becomes what is probably the strongest switch-and-bus insulator ever produced.

Illustrated in the production of this unit is a noteworthy and valuable characteristic of the Lapp Post design. The simplicity of the structure, the uniform reliability of Lapp porcelain, and the certainty of cemented caps, instead of pins or inserts, all are such that it is routinely possible to design an insulator into an unexplored strength field. And it will meet specified characteristics, without risk of unknown variables.

In this case, specified cantilever strength requirement was 10,000 pounds. Because time was short, we designed for a generous factor of safety—and obtained all of it. The porcelain is 11½″ diameter, 13⅜″ high, and weighs a little over 60 pounds. It is, of course, the traditional Lapp Station Post closed end porcelain, with integral top diaphragm.

HOW MUCH STRENGTH DO YOU NEED IN A SWITCH-AND-BUS INSULATOR?

In the Lapp plant, such porcelains as this are almost commonplace. Everywhere you look you will see pieces with the characteristic Post corrugations, in all stages of production, and in sizes for duty over a wide range of voltages and strengths. And every unit will be proved, through extensive testing facilities, to its specification requirements. No where else will you find such emphasis, such devotion, to "difficult" porcelains.

Users of Lapp porcelain—as components of electrical equipment, or as insulators for transmission or station duty—profit, in security, in long life, in low upkeep, from the experience and skill born of such design and production.

Lapp Insulator Co., Inc., Le Roy, N. Y.

for a total of $6,238,373 on the combination, more than $900,000 under the second bids.

No performance bonds were required in the original specifications. On supply contracts, such bonds are optional with the contracting officer. No foreign bids had been expected.

With their eyes opened on the matter of bids from abroad, the Army Corps of Engineers added the performance bond to the revised specifications, as a protection to the government. The requirement calls for a bond equal to 50% of the value of the contract. Foreign firms can purchase such a bond from an American surety company at the same price as domestic producers, about $2.50 per thousand dollars. But if foreign firms want protection on the bond against the risk of fluctuating exchange, as they certainly would, that insurance might cost them ten times as much.

In the new specifications, escalator limits are reduced from the former 20 and 30% to a lower level of 15 and 25%. The higher price adjustment applies to later delivery dates. Four dates are specified for the generators, the first by Sept. 1, 1955, and the fourth by June 1, 1956. Transformers are to be delivered in three groups, the first three transformers by May 1, 1955, and the final four by June 1, 1956.

There are no changes in the technical specifications except for the generators. Specified efficiency of the generators is stepped up from 97.4% to 97.9%. Further, the new specifications call for a magnetic amplifier type of voltage regulating system and for 18-in. minimum clearance between the air cooler and the generator housing.

SALES ASSIGNMENTS

COMPANY STAFFS

Graybar Electric Co, Inc, has appointed E. E. Leavy manager at its Salt Lake City Branch replacing S. B. Cooper, who died recently. B. F. Keyfauver, merchandise manager at Phoenix, succeeds Leavy as manager at Phoenix. H. M. Bridges, accountant for the Southern district since 1948, has been made operating manager of the Knoxville Branch.

Ohio Brass Co, Mansfield, Ohio, has announced that W. R. Cress is being transferred to the Chicago area as a district manager to take over the territory formerly handled by M. R. Gowing, who is becoming affiliated with J. S. G. Electric Co. V. L. Crabb, with the company's power utilities sales department since 1950, has been named district manager in the Cincinnati area to replace Cress.

General Electric Co's Apparatus Sales Division has named managers for two newly established sales districts. William J. Woods, was made manager of the Empire District with headquarters at Syracuse, N. Y. The district will include offices at Albany, Binghamton, Elmira, Jamestown, Niagara Falls, Rochester, Syracuse, and Utica, N. Y. This area formerly was covered by the GE New York District. Edward M. Ellis is the new manager of the Pacific Southwest District with headquarters at Los Angeles, Calif. The district comprises offices at Bakersfield, Los Angeles, Riverside, and San Diego, Calif., and Phoenix and Tucson, Ariz. This territory was part of the Pacific District.

Allis-Chalmers Manufacturing Co has assigned George E. Argo to its Youngstown (Ohio) district office as a sales representative. Argo, an electrical engineer, joined Allis-Chalmers in 1949.

MANUFACTURERS' EARNINGS

Company	Period Months Ended		Net Income 1953	Net Income 1952	Earnings Per Common Share 1953	Earnings Per Common Share 1952
Allied Chemical & Dye	3	Mar.	$10,306,101	$9,814,664	$1.16	$1.11
Allis-Chalmers Manufacturing	3	Mar.	4,804,493	5,218,574	1.55(a)	1.85(a)
Baldwin-Lima-Hamilton	3	Mar.	1,853,006	1,517,600	.39	.32
Beryllium	3	Mar.	189,754	.....(b)	1.07	...
Blaw-Knox	3	Mar.	1,028,033	1,016,373	.73	.72
Bowser	3	Mar.	123,173	202,664	...	...
Bridgeport Brass	3	Mar.	1,231,464	1,050,483	1.29	1.10
Colorado Fuel & Iron	3	Mar.	2,177,372	1,381,202	.81	.63
Colorado Fuel & Iron	9	Mar.	4,781,518	5,352,220	1.99(c)	2.47
Combustion Engineering	3	Mar.	1,271,681	1,081,000	1.32	1.12
Cooper-Bessemer	3	Mar.	547,000	701,000	1.01	1.26(e)
Copperweld Steel	3	Mar.	994,550	456,529	1.81	.86
Driver-Harris	3	Mar.	114,810	132,087	1.29	1.48
P. R. Mallory	3	Mar.	918,838	.....	1.49	...
Minneapolis-Honeywell Regulator	3	Mar.	2,332,770	1,294,583	.77	.40
National Supply	3	Mar.	2,589,279	2,332,520	1.69	1.51
Remington Rand(f)	12	Mar.	14,602,619	15,140,043	2.80	2.90(e)
Sun Chemical	3	Mar.	215,891	172,618	.16	.12
Sylvania Electric Products	3	Mar.	3,679,243	1,953,771	1.38(g)	.87(g)
U. S. Steel	3	Mar.	49,375,958	43,534,212	1.65	1.43
Westinghouse	3	Mar.	16,858,000	15,485,000	1.04(g)	.96(g)
			1952	1951	1952	1951
Beryllium	12	Dec.	$642,288	$.....	$3.63	$....

Notes—(a) On shares outstanding at close of period; (b) Not available; (c) Based on average number of shares; (e) Based on shares now outstanding; (f) Preliminary; (g) On shares outstanding at close of respective periods.

MEETINGS CALENDAR

Edison Electric Institute
Electrical Equipment Committee, Sir Walter Hotel, Raleigh, N. C., May 11-12; Meter-Service Committee, Wentworth-by-the-Sea, Portsmouth, N. H., May 25-27; 21st Annual Convention, Convention Hall, Atlantic City, N. J., June 1-4; Hydraulic Power Committee, Portland, Ore., June 15-16.

Chicago Electrical Industry Show
Sponsored by Electric Association and Electrical Maintenance Engineers of Chicago, Conrad Hilton Hotel, Chicago, May 11-14.

Pennsylvania Electric Association
Electrical Equipment Committee, Benjamin Franklin Hotel, Philadelphia, May 12-13; Hydraulic Power Committee, Yorktowne Hotel, York, Pa., May 14-15; Transmission-Distribution Committee, Irem Temple Country Club, Dallas, Pa., May 14-15; Systems Operation Committee, Skytop Lodge, Skytop, Pa., May 21-22; Prime Movers Committee, Beachcombers Resort Hotel, Erie, Pa., May 28-29.

American Public Power Association
Tenth Annual Convention, Sheraton Plaza Hotel, Boston, May 12-14.

Pacific Coast Electrical Association
Annual Convention, Hoberg's, Lake County, Calif., May 13-15.

Georgia Institute of Technology
Conference on Protective Relaying, Atlanta, Ga., May 14-15.

Illuminating Engineering Society
East Central Regional Conference, Lord Baltimore Hotel, Baltimore, Md., May 14-15; Southern Regional Conference, Sedgefield Inn, Greensboro, N. C., May 18-19; Great Lakes Regional Conference, Syracuse Hotel, Syracuse, N. Y., May 25-26; National Technical Conference, Hotel Commodore, New York, Sept. 13-17.

***Northwest Electric Light & Power Association**
Accounting & Business Practice Section and Personnel & Safety Section, Newhouse Hotel, Salt Lake City, Utah, May 20-22.

***Southeastern Electric Exchange**
Industrial Power Sales Conference, Fort Sumter Hotel, Charleston, S. C., May 21-22; General Sales Conference, Atlanta Biltmore Hotel, Atlanta, Ga., Nov. 4-6.

National Association of Purchasing Agents
Annual Meeting, Statler Hotel, Los Angeles, May 24-27.

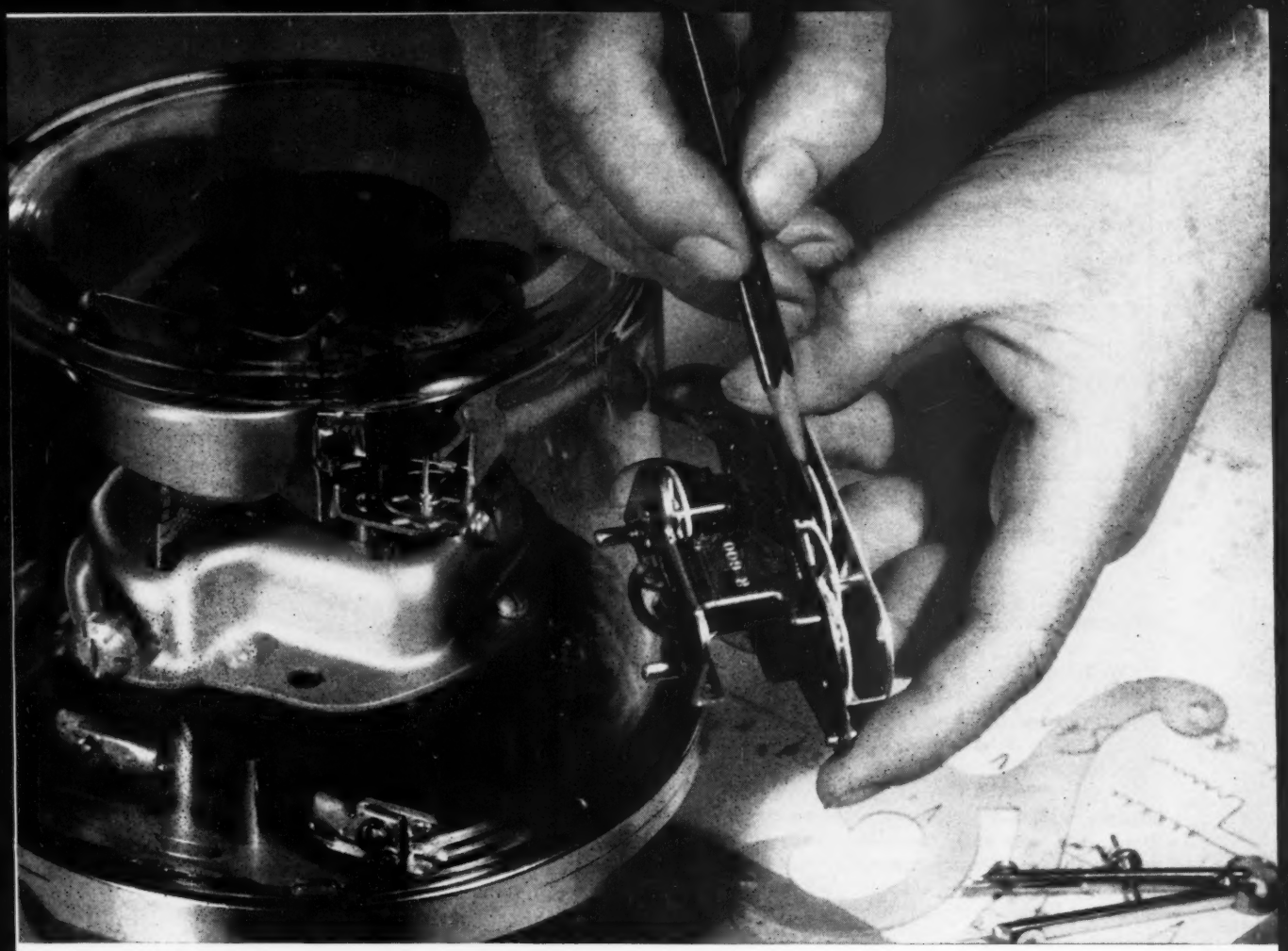
American Institute of Electrical Engineers
Conference on Electric Heating sponsored by Committee on Electric Heating and Michigan Section, AIEE, Detroit-Leland Hotel, Detroit, May 26-27; Summer General Meeting, Chalfonte-Haddon Hall, Atlantic City, N. J., June 15-19; Pacific General Meeting, Hotel Vancouver, Vancouver, B. C., Sept. 1-4; Middle-Eastern District Meeting, Daniel Boone Hotel, Charleston, W. Va., Sept. 29-Oct. 1; Fall General Meeting, Muehlebach Hotel, Kansas City, Mo., Nov. 2-6.

American Society of Mechanical Engineers
Semi-Annual Meeting, Statler Hotel, Los Angeles, June 28-July 2; Fall Meeting, Sheraton Hotel, Rochester, N. Y., Oct. 5-7; Annual Meeting, Statler Hotel, New York, Nov. 29-Dec. 4.

Public Information Program
Steering Committee, Hotel Traymore, Atlantic City, N. J., June 1; Steering Committee, Edgewater Beach Hotel, Chicago, Oct. 21; Workshop Conference, Edgewater Beach Hotel, Chicago, Oct. 22-23.

National Electrical Manufacturers Association
Annual Meeting, Haddon Hall, Atlantic City, N. J., Nov. 9-12.

*Addition this week.



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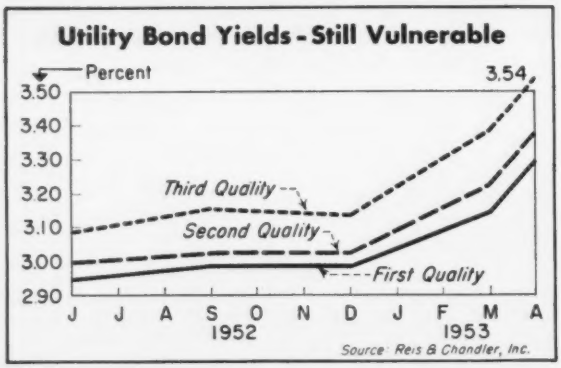


Are Bond Yields Leveling Off?

Indications are not yet but soon. However, utilities have been lagging behind the market

Utility bond yields—up sharply since early this year—are likely to go higher before they level off. But the future rise is not expected to be anything like the one that's taken place recently. And even more important there is some relief in sight.

The rise in yields on utilities has been striking. First quality bonds yield more today than third quality returned just a few months ago. The experience of Detroit Edison—whose new issue was priced to yield more than any new AA rated utility bond since 1935—has been typical.

The experience of utilities has not been unique, of course. All borrowers except mortgagees who are protected by federal regulations have been paying more for money. Here are some of the factors that have been pushing interest rates up.

Republican Policy Responsible . . . There's Republican policy on the national debt. The Treasury is trying to fund the debt into longer term issues so as to cut down the annual "roll-over" of short-term issues. And Republican debt managers have not hesitated to pay the higher interest rates the market wants—unlike their Democratic predecessors.

Government debt policy has pushed Victory 2½'s down around the 92 level and raised rates right along the line for shorter term governments. The latest government blow to the interest rate structure came when the Treasury offered $1 billion of 3¼%, 30-year bonds in April.

Another reason for the jump in utility yields has been the abnormally tight money situation. Bank loans declined less than the usual seasonal amount this spring, showing the high demand for money. Heavy inventory building by industry (EBO, April 27) has undoubtedly contributed to keeping money tight. Business finances a lot of its inventory with borrowed money.

In addition, there was one special factor affecting utilities. Yields of utility bonds were slow to react to the prospect of higher rates on long-term government bonds (EBO, Jan. 19). Markets for short-term governments and other bonds began making this adjustment way back in December. So utility bond yields were due for some increase to catch up with the rest of the bond market.

Rise in Bond Yields May Stop Soon . . . It's impossible to say for sure when and where the rise in bond yields will stop. But there are some good reasons for believing that they won't go much higher and that the rise in interest rates in general will slack off soon.

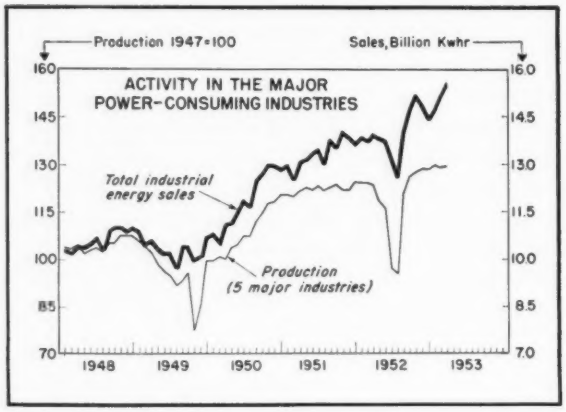
For one thing, the tight situation in money should start easing off after June. Business must pay 40% of its tax obligations to the U. S. government in June, under the Mills plan. After that, borrowing to meet taxes will be slight for the rest of 1953.

Then, too, business activity—which always requires borrowing—should be slacking off after mid-year. The rise in industrial production (more than 6% in six months) has just about halted. If business activity slips a bit in the third quarter, that would take some pressure off demand for new borrowed money.

In addition, the government is not likely to be such an upsetting influence on yields in the future. The Treasury has just about completed its operation of "feeling out" the bond markets, with that 3¼% long-term issue. Future issues are expected to fit more into the current pattern of the bond market—not send it reaching for higher and higher yields, as they have recently.

One reason to expect caution from Washington is political. The Treasury has had a lot of criticism for its high interest rate policy. Another is that the government does not want to make money so expensive that it starts a business downturn. And that could happen unless it is careful.

All this means that upward pressure on interest rates generally should ease and perhaps recede after mid-year. But it does not necessarily mean there won't be more increases in utility yields between now and then. They might go up a few percentage points more to get in line with the prices of other bonds.



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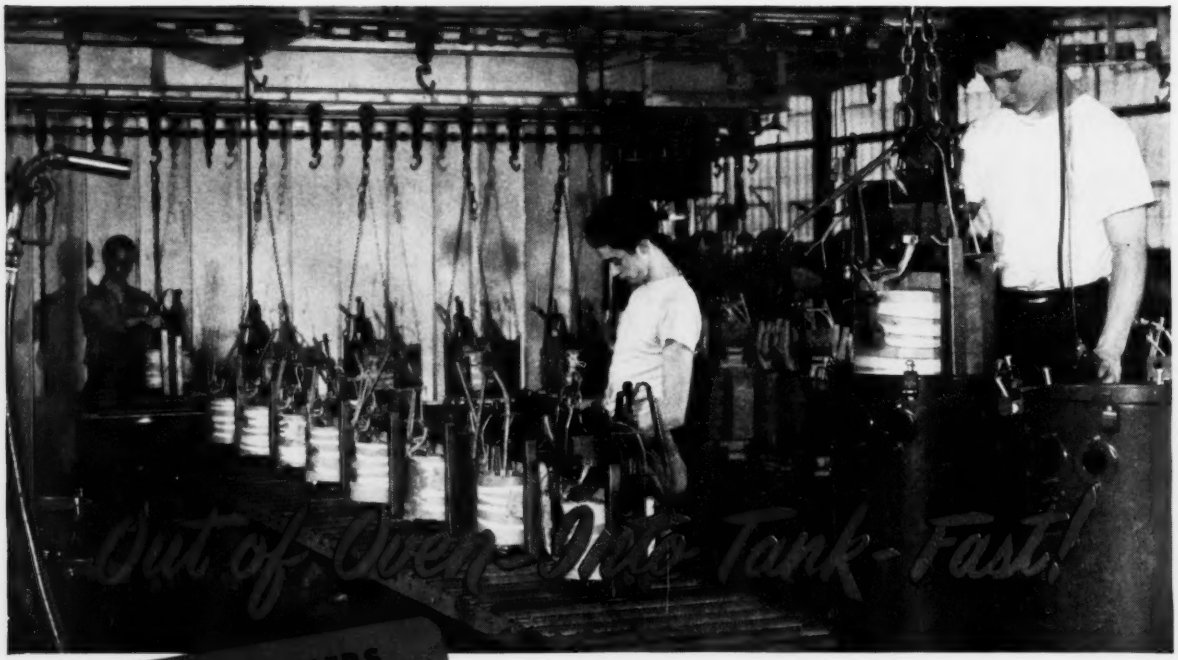

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